Center Joint Unified School District
Project No. 24-10
Dudley Elementary School
Spinelli Elementary School
Roofing Project
ADDENDUM NO. 1

April 29, 2024

Owner: Center Joint Unified School District
8408 Watt Avenue
Antelope, CA 95843

Project Manager: Capital Program Management, Inc.
1851 Heritage Lane, Suite 210
Sacramento, CA 95815

This Addendum has been prepared to clarify, modify, delete, or add to the drawings and/or specifications for the above referenced project, and revisions to items listed here shall supersede description thereof prior to the above stated date. All conditions not specifically referenced here shall remain the same. It is the obligation of the Prime Contractor to make subcontractors aware of any items herein that may affect submitted bids.

Acknowledge receipt of this addendum by inserting its number and date in the bidding documents. Failure to do so may subject bidder to disqualification.

All addenda items refer to the plans and specifications unless specifically noted otherwise.

TOTAL PAGES IN THIS ADDENDUM (including attachments): **78**

Center Joint Unified School District
Project No. 24-10
Dudley Elementary School
Spinelli Elementary School
Roofing Project
ADDENDUM NO. 1

Part A. BIDDING AND CONTRACT REQUIREMENTS

1.1 **The bid date has not changed. Bids are due Thursday, May 2, 2024 by 3:00:00 p.m. at the Center Joint Unified School District – Facilities Department, 8408 Watt Avenue, Antelope, CA 95843.**

Part B. TECHNICAL REQUIREMENTS

2.1 N/A

Part C. DRAWINGS

3.1 N/A

Part D. RESPONSES TO CONTRACTOR QUESTIONS

4.1 N/A

ATTACHMENTS

5.1 Pre-Bid Conference and Site Visit Agenda dated April 24, 2024 (2 pages)
6.1 Pre-Bid Conference and Site Visit Sign-in Sheet dated April 24, 2024 (1 page)
7.1 Roof Inspection Report from WeatherWeld for Dudley Elementary School dated April 16, 2024 (32 pages)
8.1 Roof Inspection Report from WeatherWeld for Spinelli Elementary School dated April 16, 2024 (41 pages)

End of Addendum

Center Joint Unified School District
Dudley ES and Spinelli ES Roofing
Project No. 24-10
Spinelli ES – 3401 Scotland Drive, Antelope, CA 94843
Dudley ES – 8000 Aztec Wat., Antelope, CA 95843

PRE-BID CONFERENCE AGENDA

Date: **April 24, 2024** **Time: 3:00 PM (Starting at Spinelli ES)**
Project: **Dudley Elementary School and Spinelli Elementary School Roof Project, No. 24-10**
Bid Date: **Thursday, May 2, 2024, 3:00:00 PM**
Location for Receipt of Bid: **Center Joint Unified School Facilities Office located at 8408 Watt Ave, Antelope, CA 95843**

I. Meeting Called to Order

II. Introduction of Project Team members:
A. District Representative(s) – Richard Putnam, Director of Facilities, Center Joint Unified School District & Angela Espinoza, Administrative Secretary – MOT Department
B. Dudley Elementary School – Melissa Oliver, Principal
C. Spinelli Elementary School – Erica Olmstead, Principal
D. Owner's Representative – Mark Rosson & Terra Carlson Capital Program Management, Inc.

III. Bidding Documents: Available on the District Website @ https://www.centerusd.org/About-Us/General-information/Request-For-Proposal/index.html

IV. Contracting Format: Prime Contract

V. Scope of Work Description: Refer to technical specifications and drawings (WeatherWeld). Alternates: Portable Buildings

VI. Engineers Estimate: $600,000

VII. Bidding and Contract Award Requirements:
A. License requirement: B or C39
B. Pre-Qualification of Bidders: Prequalification not required.
C. Bid Bond or Certified Check – Required
D. Prevailing Wages – See Terms and Conditions of Contract for Labor and Materials, Section 6.1, Prevailing Wage Rates. Certified payrolls, payroll records and other documents shall be required along with your progress billings. www.dir.ca.gov/dlsr/DPreWageDetermination.htm.
E. DIR Registration of Contractor and Subcontractor: See Terms and Conditions of Contract for Labor and Materials, Section 6.3, DIR Registration.
F. Bond and Insurance Requirements: See Project Manual, General Conditions, Article 11
G. Bid Form:
1. Completed Forms No exclusions
2. No fax or phone bids
3. Bids shall be valid for 90 days

VIII. Project Schedule: (128) Calendar Days, Work See Special Conditions in the Bidding and Contract Documents

IX. Department of Justice (DOJ) Clearance, Badges and Security: See Contractor Certification Regarding Background Checks in Bidding and Contract Documents

X. Site Information:
A. Site access, temporary facilities, staging areas and parking
B. Working hours: This scope of work is to be performed so as to not disturb the learning environment. Work can be conducted during regular business hours from June 3rd thru July 31st .

Center Joint Unified School District
Dudley ES and Spinelli ES Roofing
Project No. 24-10
Spinelli ES – 3401 Scotland Drive, Antelope, CA 94843
Dudley ES – 8000 Aztec Wat., Antelope, CA 95843

XI. Site Walk

XII. General Questions

XIII. Adjournment

Important note: Responses to inquiries and discussions occurring at this pre-bid walk-through shall in no way change or modify the bid documents. The bid documents will be affected only by addenda issued prior to the bid date. We encourage all questions asked at the walk be followed up with an RFI.

Send inquiries by 12:00pm on April 26, 2024, to:
Terra Carlson at Terra@capitalpm.com

Center Joint Unified School District

PRE-BID CONFERENCE & SITE VISIT SIGN IN SHEET

Project No. 24-10

Dudley ES & Spinelli ES Roofing - Perm Buildings w/Portables as Alternates

Wednesday, April 24, 2024

4:00 PM - Dudley ES

Company Name	Company Representative	Company City	Phone #	E-Mail	Initial Dudley	Initial Spinelli
Best Contracting Services, Inc	Javier Solis	Union City, CA	510-953-0790	estimating@bestcontracting.com		
Alliance Contracting Services	Gabriel Grando	Sacramento	510-467-8354	Gabe.G@alliance-contracting.com		
McDonnell Roofing	Bob Klobas	Manteca	510-773-3434	Klobasbob@yahoo.com		

WEATHERWELD
ROOFING MADE SIMPLE

Roof Management Report

CENTER UNIFIED SCHOOL DISTRICT

DUDLEY ELEMENTARY SCHOOL

PERMANENT BUILDINGS (METAL ROOF & BUILT UP SECTION)
& ALTERNATE BUILDINGS (BUILT UP SECTION & SINGLE PLY)

Measurements are from aerial survey and do not include roof slope or parapet walls.
This image is for internal use and not to be used for bidding.

Prepared for:

Terra Carlson
Center USD
terra@capitalpm.com
(916) 212-8357

Prepared by:

Nathen Berry
Technical Manager
nathen@weatherweld.com
(909) 727-1239

Scan QR Code

Video / More Information / Next Steps

WEATHERWELD a division of Liquiform Technologies, Inc
9757 7th St Suite 803 Rancho Cucamonga, CA 91730 (888) 440-3224

BUILDING SUMMARY

OWNER: Center USD
BUILDING: Dudley ES - Permanent Buildings (Built Up)
ADDRESS: 8000 Aztec Way, Antelope, CA 95843
CONTACT: Terra Carlson
EMAIL: terra@capitalpm.com
PHONE: (916) 212-8357

ROOFTOP INSPECTION

INSPECTION DATE:	4/16/24	**CORE SAMPLE:**	YES
INSPECTION TYPE:	VISUAL	**DECK CONDITION:**	FAIR
ROOF LEAK DATA:	OWNER	**SOURCE:**	VISUAL

BUILDING INFORMATION

AGE	SQ. FT. (INCLUDING PARAPET WALLS)	ACCESS	SLOPE	HEIGHT
15+ YEARS	51,027	LADDER	1/4" - 12	15 FT

ROOF SYSTEM	TYPE	LAYERS	ATTACHMENT	THICKNESS
DECK:	PLYWOOD	1	MECHANICAL	-
INSULATION:	ISO	1		1"
EXISTING:	BUILT UP	1	ADHESIVE	-
ADDITIONAL ROOF:	-	-	-	-

DETAILS:

PERIMETER:	DRAINAGE EDGE	-
PERIMETER FLASHING:	EDGE METAL	-
DRAINAGE:	GUTTER	-

ROOFTOP EQUIPMENT/ACCESSORIES		TYPE	QUANTITY
MECHANICAL EQUIPMENT:	EXHAUST VENT	AC HANDLER UNITS	14
PENETRATIONS:	PIPES	-	25+
SKYLIGHTS:	-		-

EXISTING ROOF TYPE	RATING
DECK:	FAIR
FIELD – EXISTING ROOF:	POOR
FIELD SEAMS – EXISTING ROOF:	POOR
PERIMETER – EXISTING ROOF:	POOR
WALLS:	N/A
DRAINS:	POOR
SKYLIGHTS:	N/A
COUNTER FLASHING:	N/A
DEBRIS ON ROOF:	NO
PONDING WATER:	NO

LINE ITEMS:

NAME	QTY	APPROX LINE ITEM COST
	-	
	-	
	-	
TOTAL		

WEATHERWELD ROOF SYSTEM	WARRANTY LENGTH	APPROXIMATE TOTAL (+/-15%)
R-16-30-A	40 YEARS	$816,432

Nathen Berry

WEATHERWELD

4/16/2024 | 7 Photos

Center USD - Dudley Elementary School, Main Permanent Buildings (Built-Up)

1

This aerial photo shows all sections of the building. The aerial map includes GPS dimensions of the buildings that are included in this report. The areas are outlined in red boxes. These dimensions are the area and size basis of this report.
Measurements are from aerial survey and do not include roof slope. This image is for internal use and not to be used for bidding purposes.

Project: Center USD, Dudley ES - Roofing of Permanent Buildings
Date: 4/16/2024, 10:19pm
Creator: WeatherWeld Team

2

This type of roof consist of multiple layers of rolls that are made of waterproof with asphalt. Because this type of roof relies on adhesive or asphalt waterproofing in between seams, it is difficult to keep this type of roof water tight as the roof system ages. Considering the age of the roof and the number of penetrations, a permanent solution is required in order to keep this building watertight in the long term.

Project: Center USD, Dudley ES - Roofing of Permanent Buildings
Date: 4/16/2024, 1:11pm
Creator: Nathen Berry

3

The roof was core tested to determine the components of the roofing system from the deck up.
The roof assembly for this building consists of a:
- Plywood Roof Deck
- Insulation
- Built Up roof

This core test hole was patched and is 100% watertight. The core sample was retained for our internal testing.

Project: Center USD, Dudley ES - Roofing of Permanent Buildings
Date: 4/16/2024, 1:14pm
Creator: Nathen Berry

The roof drains off the edge into a sheet metal gutter system. The gutter appears to be deteriorating. It is recommended to remove existing gutter and perimeter edge flashing and install new gutter with overlapping perimeter edge flashing system. The color can be chosen by the owner.

Project: Center USD, Dudley ES - Roofing of Permanent Buildings
Date: 4/16/2024, 1:11pm
Creator: Nathen Berry

Rooftop penetrations such as vent/exhaust fans need to be repaired often. All penetrations will be encapsulated with WeatherWeld, making a seamless transition between the penetration and the roof. All penetrations get umbrella style storm collar flashings installed above the penetration, "where applicable."

Project: Center USD, Dudley ES - Roofing of Permanent Buildings
Date: 4/16/2024, 1:11pm
Creator: Nathen Berry

New penetrations that have been tied into the existing roof system with repair materials. All penetrations will be properly stripped in with WeatherWeld, with umbrella style storm collars where applicable.

Project: Center USD, Dudley ES - Roofing of Permanent Buildings
Date: 4/16/2024, 1:12pm
Creator: Nathen Berry

Transitions between roof sections consist of a wall with coping cap, bridging the gap between roof sections. It is recommended to install WeatherWeld to the base flashing and install new cleated sheet metal coping.

Project: Center USD, Dudley ES - Roofing of Permanent Buildings
Date: 4/16/2024, 1:12pm
Creator: Nathen Berry

WEATHERWELD a division of Liquiform Technologies, Inc.

9757 7th St Suite 603 Rancho Cucamonga, CA 91730 (888) 448-3234

BUILDING SUMMARY

OWNER: Center USD
BUILDING: Dudley ES - Alternate Buildings (Metal Roofs)
ADDRESS: 8000 Aztec Way, Antelope, CA 95843
CONTACT: Terra Carlson
EMAIL: terra@capitalpm.com
PHONE: (916) 212-8357

ROOFTOP INSPECTION

INSPECTION DATE:	4/16/24	**CORE SAMPLE:**	NO
INSPECTION TYPE:	VISUAL	**DECK CONDITION:**	FAIR
ROOF LEAK DATA:	OWNER	**SOURCE:**	VISUAL

BUILDING INFORMATION

AGE	SQ. FT. (INCLUDING PARAPET WALLS)	ACCESS	SLOPE	HEIGHT
15+ YEARS	16,800	LADDER	1/4" - 12	15 FT

ROOF SYSTEM	TYPE	LAYERS	ATTACHMENT	THICKNESS
DECK:	METAL	1	MECHANICAL	-
INSULATION:	-	-		-
EXISTING:	3" STANDING SEAM	1	MECHANICAL	-
ADDITIONAL ROOF:	-	-	-	-

DETAILS:

PERIMETER:	DRAINAGE EDGE	-
PERIMETER FLASHING:	EDGE METAL	-
DRAINAGE:	GUTTER	-

ROOFTOP EQUIPMENT/ACCESSORIES	TYPE	QUANTITY
MECHANICAL EQUIPMENT:	-	-
PENETRATIONS:	-	-
SKYLIGHTS:	-	-

EXISTING ROOF TYPE	RATING
DECK:	FAIR
FIELD – EXISTING ROOF:	POOR
FIELD SEAMS – EXISTING ROOF:	POOR
PERIMETER – EXISTING ROOF:	POOR
WALLS:	N/A
DRAINS:	POOR
SKYLIGHTS:	N/A
COUNTER FLASHING:	N/A
DEBRIS ON ROOF:	YES
PONDING WATER:	NO

LINE ITEMS:

NAME	QTY	APPROX LINE ITEM COST
	-	
	-	
	-	
TOTAL		

WEATHERWELD ROOF SYSTEM	WARRANTY LENGTH	APPROXIMATE TOTAL (+/-15%)
R-16-30-M-A	40 YEARS	$336,000

Nathen Berry

WEATHERWELD

4/16/2024 | 5 Photos

Center USD - Dudley Elementary School, Alternate Buildings (Metal Sections)

Dudley Elementary School - Alternate Buildings (Metal Roofs)

Standing Seam metal is typically installed on modular buildings and used as portable classrooms for public agencies.The discussion below highlights the reasons why these types of roof leak. The solution to eliminate roof leaks from buildings such as portable classrooms is also discussed.

- **Seam Vulnerability:** The primary issue identified during the inspection is the vulnerability of the standing seam design. The crimps at the tops of seams, along with sealants, are crucial for maintaining water tightness. However, over time, expansion and contraction caused by temperature fluctuations, as well as the impact of blowing winds, compromise the integrity of these seams. This compromised integrity leads to water infiltration during rainfall events.
- **Sealant Deterioration:** Sealants play a vital role in preventing water penetration through the seams. However, due to exposure to UV radiation, temperature variations, and general weathering, these sealants degrade over time. As a result, they lose their effectiveness in sealing the seams, contributing to potential leaks.
- **Screw Anchorage Issues:** Another contributing factor to roof leaks is related to the screws that anchor the metal panels to the deck. Over time, these screws may loosen due to structural movement or corrosion, creating gaps through which water can enter the building envelope.
- **Localized Damage:** In addition to the systemic issues mentioned above, localized damage such as dents, punctures, or corrosion spots were observed during the inspection. While these damages may not directly cause leaks, they can exacerbate existing vulnerabilities and compromise the overall integrity of the roof system.

This aerial photo shows all sections of the building. The aerial map includes GPS dimensions of the buildings that are included in this report. The areas are outlined in red boxes. These dimensions are the area and size basis of this report.
Measurements are from aerial survey and do not include roof slope. This image is for internal use and not to be used for bidding purposes.

Project: Center USD, Dudley ES - Alternate Building Metal Roof Section
Date: 4/16/2024, 10:03pm
Creator: Nathen Berry

This building consists of a metal deck and 3" standing seam metal roof.

Project: Center USD, Dudley ES - Alternate Building Metal Roof Section
Date: 4/16/2024, 2:56pm
Creator: Nathen Berry

A common problem with metal roofing is fastener back out.
Expansion and contraction of the sheet metal is causing fastener loosening or dislodging.
When the fastener loosens and backs out, a hole is created and water can leak into the building.

Project: Center USD, Dudley ES - Alternate Building Metal Roof Section
Date: 4/16/2024, 2:56pm
Creator: Nathen Berry

Gaps under metal panels at drainage areas are prone to capillary water leaking into the building. This can be remedied by sealing the underside gap between the metal panel and the building structure.

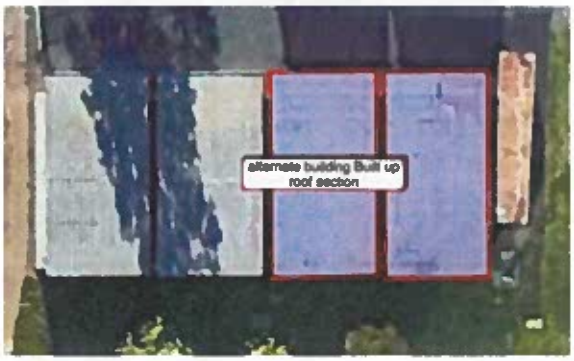
Project: Center USD, Dudley ES - Alternate Building Metal Roof Section
Date: 4/16/2024, 2:55pm
Creator: Nathen Berry

Coating or mastic repairs are not working. Once water gets between repair material and the roof material, it creates the ability for deterioration.
WeatherWeld is designed to encapsulate the existing roof and make it one encapsulated piece, eliminating roof leaks.

Project: Center USD, Dudley ES - Alternate Building Metal Roof Section
Date: 4/16/2024, 2:56pm
Creator: Nathen Berry

WEATHERWELD a division of Liquiform Technologies Inc
9757 7th St Suite 603 Rancho Cucamonga, CA 91730 (888) 446-3224

BUILDING SUMMARY



OWNER: Center USD
BUILDING: Dudley ES - Alternate Buildings (Built Up Roofs)
ADDRESS: 8000 Aztec Way. Antelope, CA 95843
CONTACT: Terra Carlson
EMAIL: terra@capitalpm.com
PHONE: (916) 212-8357

ROOFTOP INSPECTION

INSPECTION DATE:	4/16/24	**CORE SAMPLE:**	YES
INSPECTION TYPE:	VISUAL	**DECK CONDITION:**	FAIR
ROOF LEAK DATA:	OWNER	**SOURCE:**	VISUAL

BUILDING INFORMATION

AGE	SQ. FT. (INCLUDING PARAPET WALLS)	ACCESS	SLOPE	HEIGHT
15+ YEARS	2,400	LADDER	1/4" - 12	15 FT

ROOF SYSTEM	TYPE	LAYERS	ATTACHMENT	THICKNESS
DECK:	PLYWOOD	1	MECHANICAL	-
INSULATION:	-	-		-
EXISTING:	BUILT UP	1	ADHESIVE	-
ADDITIONAL ROOF:	-	-	-	-

DETAILS:

PERIMETER:	DRAINAGE EDGE	-
PERIMETER FLASHING:	EDGE METAL	-
DRAINAGE:	GUTTER	-

ROOFTOP EQUIPMENT/ACCESSORIES	TYPE	QUANTITY
MECHANICAL EQUIPMENT:	-	-
PENETRATIONS:	-	-
SKYLIGHTS:	-	-

EXISTING ROOF TYPE	RATING
DECK:	FAIR
FIELD – EXISTING ROOF:	POOR
FIELD SEAMS – EXISTING ROOF:	POOR
PERIMETER – EXISTING ROOF:	POOR
WALLS:	N/A
DRAINS:	FAIR
SKYLIGHTS:	N/A
COUNTER FLASHING:	N/A
DEBRIS ON ROOF:	NO
PONDING WATER:	NO

LINE ITEMS:

NAME	QTY	APPROX LINE ITEM COST
	-	
	-	
	-	
TOTAL		

WEATHERWELD ROOF SYSTEM	WARRANTY LENGTH	APPROXIMATE TOTAL (+/-15%)
R-16-30-A	40 YEARS	$38,400

Nathen Berry

WEATHERWELD

4/16/2024 | 5 Photos

ROOFING MADE SIMPLE

Center USD - Dudley Elementary School, Alternate Portables (Built Up)

This aerial photo shows all sections of the building. The aerial map includes GPS dimensions of the buildings that are included in this report. The areas are outlined in red boxes. These dimensions are the area and size basis of this report.
Measurements are from aerial survey and do not include roof slope. This image is for internal use and not to be used for bidding purposes.

Project: Center USD, Dudley ES - Alternate Building Built Up Roof Section
Date: 4/16/2024, 9:58pm
Creator: Nathen Berry

This type of roof consists of multiple layers of rolls that are made of waterproof with asphalt. Because this type of roof relies on adhesive or asphalt waterproofing in between seams, it is difficult to keep this type of roof water tight as the roof system ages. Considering the age of the roof and the number of penetrations, a permanent solution is required in order to keep this building watertight in the long term.

Project: Center USD, Dudley ES - Alternate Building Built Up Roof Section
Date: 4/16/2024, 3:13pm
Creator: Nathen Berry

The roof was core tested to determine the components of the roofing system from the deck up.
The roof assembly for this building consists of a:
- Plywood Roof Deck
- Built Up Roof

This core test hole was patched and is 100% watertight. The core sample was retained for our internal testing.

Project: Center USD, Dudley ES - Alternate Building Built Up Roof Section
Date: 4/16/2024, 3:19pm
Creator: Nathen Berry

The roof drains off the edge into a sheet metal gutter system. The gutter appears to be deteriorating. It is recommended to remove existing gutter and perimeter edge flashing and install new gutter with overlapping perimeter edge flashing system. color can be chosen by the owner.

Project: Center USD, Dudley ES - Alternate Building Built Up Roof Section
Date: 4/16/2024, 3:13pm
Creator: Nathen Berry

The perimeter of this building consists of a sheet metal edge flashing system. It is recommended to remove all perimeter edge flashings and install a new sheet metal edge flashing system to facilitate seamless roof attachment to perimeter edges.

Project: Center USD, Dudley ES - Alternate Building Built Up Roof Section
Date: 4/16/2024, 3:13pm
Creator: Nathen Berry

WHAT DOES THIS ROOF NEED TO STAY WATERTIGHT?

CENTER USD - DUDLEY ELEMENTARY SCHOOL
PERMANENT BUILDING (BUILT UP ROOFS), ALTERNATE BUILDINGS (METAL ROOFS), ALTERNATE PORTABLES (BUILT UP ROOFS)

If your existing roof is in serviceable condition and targeted maintenance will solve roof leaks for the long term, it's recommended to repair the roof and not spend additional money on roof reinforcement or a new roof system.

If maintaining the roof once with targeted maintenance will not keep the building watertight, reinforcing the existing roof with WeatherWeld is the next step.

Certain conditions dictate that the existing roof may not be able to be reinforced. In this case, roof removal would be required.

☐ **TARGETED MAINTENANCE**

It is recommended to perform regular maintenance on this roof using a targeted maintenance plan to repair/seal areas of the roof that could be leaking. WeatherWeld can be installed by hand for small repairs to the existing roof. The owner/facilities manager can perform repairs on their own, or have an approved contractor install WeatherWeld out of buckets. WeatherWeld's Technical Representative will help create a scope of work and assist in creating a plan to get the roof watertight under the targeted maintenance plan.

☒ **REINFORCE EXISTING ROOF**

WeatherWeld is the perfect solution to eliminate the roof leaks on this building. The existing roof can stay in place, and a WeatherWeld roof reinforcement coating system will be installed directly over the existing roof making the entire roof seamless from the top of the parapet wall to the bottom of the drain. This will eliminate all roof leaks. By installing a WeatherWeld roof on this building, the facilities team will have a leak free roof that will require no maintenance for the life of the warranty. You get the benefit of WeatherWeld encapsulating the ductwork and equipment issues all at once. The finished roof will have a white "cool roof" title 24 compliant surface.

☐ **REINFORCE EXISTING ROOF (SILICONE ROOFS)**

Silicone coatings are not compatible with typical roofing materials. The only thing that sticks to silicone, is silicone. The best solution for silicone coated roofs is to tear the roof and start over. When removal is not possible, a new roof system can be installed over the existing roof. For coated standing seam metal, flute fill insulation can be mechanically installed, and a new seamless roof system installed creating a flat roof.

☐ **REMOVE ROOF – INSTALL NEW ROOF SYSTEM**

The following cases indicate that a roof needs to be removed:

1. The building has more than one roof system installed—building code only allows a maximum of two roof systems to be installed on a building.
2. If there is trapped moisture in the roof system
3. Building modernization requires exposing the roof deck
4. Roof drainage needs improvement
5. Roof deck replacement is required on a large scale.

☐ **REMOVE TOP ROOF LAYER – INSTALL NEW ROOF SYSTEM**

Remove top roof layer, leave the original roof in place. In some cases, the original roof system would be a candidate for WeatherWeld roof reinforcement and would count as a roof coating system. For this instance, remove only the top layer, leaving the original roof system. Once the top roof is removed, prepare the original roof, and install WeatherWeld seamless roof reinforcement.

☐ **REMOVE EXISTING ROOF – REUSE EXISTING INSULATION**

Remove the existing roof and reuse existing insulation. If roofing systems requires removal but existing roof insulation can be reused, attach a ½" gypsum substrate board and install a WeatherWeld new roof reinforcement system.

WEATHERWELD a division of Liquiform Technologies, Inc
9757 7th St Suite 903 Rancho Cucamonga, CA 91730 (888) 449-3224

BUILDING SUMMARY

OWNER: Center USD
BUILDING: Dudley ES - Alternate Portable (Single Ply)
ADDRESS: 8000 Aztec Way, Antelope, CA 95843
CONTACT: Terra Carlson
EMAIL: terra@capitalpm.com
PHONE: (916) 212-8357

ROOFTOP INSPECTION

INSPECTION DATE:	4/16/24	**CORE SAMPLE:**	YES
INSPECTION TYPE:	VISUAL	**DECK CONDITION:**	FAIR
ROOF LEAK DATA:	OWNER	**SOURCE:**	VISUAL

BUILDING INFORMATION

AGE	SQ. FT. (INCLUDING PARAPET WALLS)	ACCESS	SLOPE	HEIGHT
15+ YEARS	1,200	LADDER	1/4" - 12	15 FT

ROOF SYSTEM	TYPE	LAYERS	ATTACHMENT	THICKNESS
DECK:	PLYWOOD	1	MECHANICAL	-
INSULATION:	DENSDECK			-
EXISTING:	SINGLE PLY	1	MECHANICAL	-
ADDITIONAL ROOF:	-	-	-	-

DETAILS:

PERIMETER:	DRAINAGE EDGE	-
PERIMETER FLASHING:	EDGE METAL	-
DRAINAGE:	GUTTER	-

EXISTING ROOF TYPE	RATING
DECK:	FAIR
FIELD – EXISTING ROOF:	FAIR
FIELD SEAMS – EXISTING ROOF:	FAIR
PERIMETER – EXISTING ROOF:	POOR
WALLS:	N/A
DRAINS:	FAIR
SKYLIGHTS:	N/A
COUNTER FLASHING:	N/A
DEBRIS ON ROOF:	NO
PONDING WATER:	NO

ROOFTOP EQUIPMENT/ACCESSORIES	TYPE	QUANTITY
MECHANICAL EQUIPMENT:	-	-
PENETRATIONS:	PIPES	2
SKYLIGHTS:	-	-

LINE ITEMS:

NAME	QTY	APPROX LINE ITEM COST
	-	
	-	
	-	
TOTAL		

WEATHERWELD ROOF SYSTEM	WARRANTY LENGTH	APPROXIMATE TOTAL (+/-15%)
NCNN-1B-16-30-A	40 YEARS	$22,800

Nathen Berry

WEATHERWELD

4/16/2024 | 5 Photos

Center USD - Dudley Elementary School, Alternate Portable (Single Ply)

This aerial photo shows all sections of the building. The aerial map includes GPS dimensions of the buildings that are included in this report. The areas are outlined in red boxes. These dimensions are the area and size basis of this report.
Measurements are from aerial survey and do not include roof slope. This image is for internal use and not to be used for bidding purposes.

Project: Center USD, Dudley ES - Alternative Portable Single Ply
Date: 4/16/2024, 10:13pm
Creator: WeatherWeld Team

Single ply membranes installed on roofs consist of thin synthetic membranes that are typically between 30 and 80 mils thick.
For reference, these materials range in thickness between a dime and a nickel.
Thin wide sheets of plastic material are fastened or adhered to the roof deck at edges of the sheets then welded at the edges with a 500° hot air welder.
Typical problems with thin plastic synthetic membranes consist of the following:
• Uv deterioration of plastic membrane

Project: Center USD, Dudley ES - Alternative Portable Single Ply
Date: 4/16/2024, 3:37pm
Creator: Nathen Berry

The roof was core tested to determine the components of the roofing system from the deck up.
The roof assembly for this building consists of a:
• Plywood Roof Deck
• Gypsum Board
• Single Ply Membrane

This core test hole was patched and is 100% watertight. The core sample was retained for our internal testing.

Project: Center USD, Dudley ES - Alternative Portable Single Ply
Date: 4/16/2024, 3:33pm
Creator: Nathen Berry

The roof drains off the edge into a sheetmetal gutter system. The gutter appears to be deteriorating. It is recommended to remove existing gutter and perimeter edge flashing and install new gutter with overlapping perimeter edge flashing system. Color can be chosen by the owner.

Project: Center USD, Dudley ES - Alternative Portable Single Ply
Date: 4/16/2024, 3:36pm
Creator: Nathen Berry

The perimeter of this building consists of a sheet metal edge flashing system. It is recommended to remove all perimeter edge flashings and install a new sheet metal edge flashing system to facilitate seamless roof attachment to perimeter edges.

Project: Center USD, Dudley ES - Alternative Portable Single Ply
Date: 4/16/2024, 3:37pm
Creator: Nathen Berry

WHAT DOES THIS ROOF NEED TO STAY WATERTIGHT?

CENTER USD - DUDLEY ELEMENTARY SCHOOL
ALTERNATE PORTABLES (SINGLE PLY)

If your existing roof is in serviceable condition and targeted maintenance will solve roof leaks for the long term, it's recommended to repair the roof and not spend additional money on roof reinforcement or a new roof system.

If maintaining the roof once with targeted maintenance will not keep the building watertight, reinforcing the existing roof with WeatherWeld is the next step.

Certain conditions dictate that the existing roof may not be able to be reinforced. In this case, roof removal would be required.

☐ **TARGETED MAINTENANCE**

It is recommended to perform regular maintenance on this roof using a targeted maintenance plan to repair/seal areas of the roof that could be leaking. WeatherWeld can be installed by hand for small repairs to the existing roof. The owner/facilities manager can perform repairs on their own, or have an approved contractor install WeatherWeld out of buckets. WeatherWeld's Technical Representative will help create a scope of work and assist in creating a plan to get the roof watertight under the targeted maintenance plan.

☐ **REINFORCE EXISTING ROOF**

WeatherWeld is the perfect solution to eliminate the roof leaks on this building. The existing roof can stay in place, and a WeatherWeld roof reinforcement coating system will be installed directly over the existing roof making the entire roof seamless from the top of the parapet wall to the bottom of the drain. This will eliminate all roof leaks. By installing a WeatherWeld roof on this building, the facilities team will have a leak free roof that will require no maintenance for the life of the warranty. You get the benefit of WeatherWeld encapsulating the ductwork and equipment issues all at once. The finished roof will have a white "cool roof" title 24 compliant surface.

☐ **REINFORCE EXISTING ROOF (SILICONE ROOFS)**

Silicone coatings are not compatible with typical roofing materials. The only thing that sticks to silicone, is silicone. The best solution for silicone coated roofs is to tear the roof and start over. When removal is not possible, a new roof system can be installed over the existing roof. For coated standing seam metal, flute fill insulation can be mechanically installed, and a new seamless roof system installed creating a flat roof.

☒ **REMOVE ROOF – INSTALL NEW ROOF SYSTEM**

The following cases indicate that a roof needs to be removed:

1. The building has more than one roof system installed—building code only allows a maximum of two roof systems to be installed on a building.
2. If there is trapped moisture in the roof system
3. Building modernization requires exposing the roof deck
4. Roof drainage needs improvement
5. Roof deck replacement is required on a large scale.

☐ **REMOVE TOP ROOF LAYER – INSTALL NEW ROOF SYSTEM**

Remove top roof layer, leave the original roof in place. In some cases, the original roof system would be a candidate for WeatherWeld roof reinforcement and would count as a roof coating system. For this instance, remove only the top layer, leaving the original roof system. Once the top roof is removed, prepare the original roof, and install WeatherWeld seamless roof reinforcement.

☐ **REMOVE EXISTING ROOF – REUSE EXISTING INSULATION**

Remove the existing roof and reuse existing insulation. If roofing systems requires removal but existing roof insulation can be reused, attach a ½" gypsum substrate board and install a WeatherWeld new roof reinforcement system.

WHY ROOFS FAIL

WHY DOES THE EXISTING ROOF FAIL?

Roofing systems fail for various reasons in a western climate like California. The following are examples of common failures.

Physical Effects

- UV Exposure: The primary reason for roofing failure is UV exposure. The Sun deteriorates roofing membranes faster than other climate regions.
- Thermal expansion and contraction: with an average temperature swing of 30 degrees, buildings cycle a minimum of 2 times a day. Over time, this creates concentrated stress on roofing materials.
- Age: All roofs deteriorate with age. When you combine the factors above, roofs dry out and become brittle, seams degrade, and roof systems lose the ability to keep the building waterproof.

Existing Roof Types and Common Issues

Built-up roof: layers of felt saturated in asphalt is one of the oldest types of roofing. As built-up roofs age, UV exposure dries out asphalt, making it brittle. This causes the roof to lose strength and elongation after approximately 10 years.
The following observations can help determine the condition of built-up roofs through visual inspection:

- Micro granules piled up near roof drains
- Exposed fiberglass felt in the field of the roof
- Ridging, buckling, or blistering in the roof system.
- Material shrinkage at intersections and base flashings

Modified built-up roofs have the same observations above and close inspection could show UV damage creating micro fractures in the roof membrane.

Gravel surfaced built-up roofs have the same observations above except damage is hidden due to the roof being covered with loose gravel—inspect carefully.

Single ply roofs: thin layers of plastic rolled out, creating a plastic membrane, must be seamed/welded by hand in the field. Rolls are designed to be installed on flat surfaces with no penetrations. Material ranges between 30 and 70 mills (extremely thin), depending on plastic membrane type. The life cycle of plastic roof membranes varies drastically on the type of plastic and the location where material is installed. A perfectly installed single ply in perfect climate might last 20 years. However, results are not typical, and life cycle varies. Single ply roofs fail for various reasons. The following observations can help determine the condition of single ply roofs through visual inspection:

- Chalking or cracking on the surface of the membrane
- Loose or delaminated seams
- Exposed scrim/fabric reinforcement
- Burn through at roof fasteners (discoloration at fasteners and plates)
- Fluttering of membrane in windy conditions
- Discoloration and other types of surface changes in plastic membrane
- Material shrinkage at intersections and base flashings

Foam and coating roofs: Spray applied foam relies on the surface coating to protect the foam underneath. As soon as the thin surface coating wears away, foam absorbs water and basically turns it into a sponge. Foam roofs require recoating the foam on a maintenance plan (5-10 years). Foam should be considered a roof maintenance system because these types of roofs are only as watertight as the thin coating on top. The following observations can help determine the condition of foam roofs through visual inspection:

- Deterioration of surface coating exposing foam insulation underneath
- Blisters in foam layers
- Wet sponge-like areas where water is saturated into foam insulation
- Holes in roof where animals peck holes in roof surface
- Uneven application inhibiting water drainage

Metal roofs: roofs with standing seam or corrugated metal rely on overlapped/crimped sheet metal panels to remain watertight. In most cases, sheet metal panels are not the cause of roof leaks. Building movement, UV deterioration of waterproofing seals, and unsealed fasteners create roof leaks. In rare occurrences, oxidation or deterioration of surface coatings corrodes the sheet metal creating rust and holes in the panel itself. The following observations can help determine the condition of metal roofs through visual inspection:

- Exposed sheet metal seams
- Failed repair material seals at seams, penetrations, and joints
- Backed out fasteners with deteriorated rubber gaskets
- Oxidation/rust in panels

HOW DO I KNOW WHEN TO REPLACE MY ROOF?

If the roof can be repaired to get the roof watertight, repair the roof. If repair won't solve all the roof problems or repair would be too extensive, roof reinforcement of the entire roof is recommended.

In some cases, legally or structurally, where the roof cannot be reinforced, removal may be required to start with a new roof system.

OPTIONS

WHAT ARE THE OPTIONS FOR REPLACEMENT OF MY ROOF?

Remove and replace the entire roof system
Most roofs with only one layer installed do not require removal. A roof needs to be removed only if there is underlying deck damage, moisture, or design defect in the existing roof system. Buildings that have two roof systems/layers installed, must be removed because building code doesn't allow more than two layers of roofing on a building. Roof removal also requires a minimum R-Value requirement to meet CA Title 24. This cost could be significant considering the cost of removal and flashing height increases, plus the cost of disruption to the building and its occupants. This is the worst-case scenario and only recommended when required.

Reinforce the existing roof
Your existing roof leaks because the roofing system has lost its ability to keep the roof watertight. This could be due to uv exposure, moisture in the roofing system, failing seams, or improper installation from the start. Overall, most roofs over 10 years old have lost the strength required to remain watertight.

Seamless Roof Reinforcement is stronger than the existing roof was when it was new. WeatherWeld takes place of the existing roof, creating a seamless reinforced membrane designed to encapsulate most existing roofs from the top of a wall continuously into the drain, making roof leaks impossible.

OTHER ROOFING OPTIONS - WHATS THE DIFFERENCE?

"ROOF RESTORATION"
There is no such thing. Age affects roofs the same way it affects people and everything else. You can't make something old into something new. Plasticizers will not regenerate within the materials, and the tensile strength lost through cycle fatigue will not return. The laws of physics always trump the promises of marketing. Cool roof coatings and "restoration" products are marketing hoaxes—they can't penetrate the existing substrate matrix at any meaningful depth and are not thick enough to be resilient long term.

COATINGS
Elastomeric and silicone are another false hope. Coating a roof does nothing but cover the roof in its existing condition with a layer of paint. The "guarantees" that are issued on these systems usually cover only material, not leaks. We have seen many 50-year silicone guarantees, but have never seen a silicone roof last a warranty length still in service.

SINGLE PLY
Single ply is a product that must be patched and repaired from the start. Typical installations with TPO and PVC last less than 15 years in the Western United States. Plastic sheets must be unrolled and welded with a hot air welder at every seam. This creates the possibility for human error.

Every seam must be physically inspected because you are left with a thin sheet of plastic with miles of welds and patches on a typical roof. The sun degrades synthetic materials at unpredictable rates, and this means the lifecycle of synthetic materials are hard to judge. This is the reason why most single plies are reformulated repeatedly.

WHAT TO LOOK FOR WHEN CHOOSING A ROOF

A long-term solution to keep the roof watertight should have the following characteristics:

SEAMLESS: The existing roof leaks because it has seams. Water finds a seam and leaks into your building. Theoretically, if a roof is seamless, there would be no place for it to leak.

STRONG: A roof must be strong enough to withstand thermal movement.

DURABLE: The seamless membrane must be resistant to rooftop traffic, debris on the roof, and rooftop equipment.

TIME TESTED: The product must have a real track record of successful performance in real life applications, not just accelerated weathering tests in a lab. Note that most single ply and coatings have not been around for a warranty period.

GUARANTEED: An NDL warranty that covers labor, material, and repairs, for the life of the warranty. Most warranties cover material but not labor; the fine print with warranty exclusions lets manufacturers escape liability.

AFFORDABLE: Add up the cost of the roof, including maintenance and replacement over 40 years. Why 40 years? Because most buildings will be here 40 years from now. When you choose roof systems that are designed to last with minimal maintenance, the lifecycle cost is lower.

WeatherWeld is a roof designed to withstand the elements and provide a leak free roof for generations. More than 30 years ago, WeatherWeld created a seamless roof system designed to reinforce existing roofs by combining the strongest long-lasting materials in the world. By combining ceramic emulsion and intertwined fiberglass together, the seamless membrane encapsulates the entire roof from the top of the wall to the bottom of the drain.

CHARACTERISTICS OF WEATHERWELD

SEAMLESS: WeatherWeld makes your roof one seamless encapsulated membrane.

STRONG: WeatherWeld is reinforced with unbelievable amounts of long strand fiberglass, which creates a membrane that you can literally drive a truck on.

DURABLE: WeatherWeld is resistant to rooftop traffic and damage.

ROBUST: WeatherWeld is thick and durable; when you see it, you'll be able to tell why it lasts so long.

TIME TESTED: WeatherWeld is one of the only roofs in the world that has lasted a warranty length and is still in excellent condition; 30+ years and still doing its job of keeping buildings watertight.

GUARANTEED: The real warranty in a roof is in the product. Don't buy based on marketing materials. Rather, buy a product that you can see will last. WeatherWeld comes with an industry leading 40-year NDL warranty that's simple: **"IF IT LEAKS, WE FIX IT."**

AFFORDABLE: The cheapest most cost-effective way for you to have a leak-free roof for generations, is to buy the right roof the first time; a roof that won't require maintenance or replacement.

SAFE: Using environmentally friendly materials that are water based, there is very little smell and disruption during installation. Most school and healthcare clients install WeatherWeld when buildings are occupied, with no complaints.

WHAT YOU GET WHEN YOU BUY WEATHERWELD

WeatherWeld:

- **Is ¼" thick, made of strong and durable materials.**
  Coatings and restoration systems are thin and weak
- **Comes with a 40-year NDL warranty.**
  Coatings and restoration systems offer warranties between 10 and 20 years, and they HAVE EXCLUSIONS for your type of roof.
- **Is seamless. It's one encapsulated piece from the top of the wall to the bottom of the drain.**
  Coatings and restoration systems are reinforced with a thin weak piece of polyester; some are not even reinforced. Unreinforced means not strong, and roof movement will continue (this means the roof will still leak).
- **Comes with turnkey support. With WeatherWeld, you get a dedicated technical team that is available 24/7 to ensure your WeatherWeld roof will last for generations. You get everything from reports, diagnostics, on-site inspections, etc.**
  Coatings and restoration companies either have zero technical support or they charge for inspection and services—you deserve a simple process from start to finish.
- **Is simple to repair. When you need to put new equipment or penetrations on the roof, repairing WeatherWeld is simple. WeatherWeld repair is available in a bucket that you or your maintenance team can install by hand. Simply contact us, and problem solved!**
- **Requires no maintenance. All you have to do is keep the drains clear.**

BUDGET

CENTER USD - DUDLEY ELEMENTARY SCHOOL

The roof budget below is designed to give a building owner or facilities managers a budget, or a range of what a roof system should cost. **WeatherWeld is a roof system manufacturer, and we do not provide full roof installations as a contractor.** This budget is based on an approximate estimate of what a licensed and approved WeatherWeld contractor will bid for the roof project including labor, material, warranty, and ancillary services. This budget is a projected estimate valid for the next 30 days. Actual budgets and pricing may vary based on material price increases, inflation, availability, and contractor profit margins, etc.

BUDGETS ARE ESTIMATE RANGES AND MAY VARY BY +/- 15%

	PERMANENT BUILDING (BUILT UP ROOFS)	ALTERNATE BUILDINGS (METAL ROOFS)	ALTERNATE BUILDINGS (BUILT UP ROOFS)	ALTERNATIVE PORTABLE (SINGLE PLY)	TOTAL
WEATHERWELD SPECIFICATION	R-16-30-A	R-16-30-M-A	R-16-30-A	NCN-1B-16-30-A	
WARRANTY LENGTH	40 YRS	40 YRS	40 YRS	40 YRS	
APPROX. ROOF AREA (INCL PARAPET WALLS)	51,027	16,800	2,400	1,200	71,427
PRICE PER SQ FT	$16	$20	$16	$19	
LINE-ITEM TOTAL					
GRAND TOTAL	$816,432	$336,000	$38,400	$22,800	$1,213,632

APPROXIMATE PRICE PER FOOT INSTALLED FOR 40 YEAR ROOF SYSTEM

$16.99 PER FOOT

APPROXIMATE TOTAL FOR ROOFING PROJECT IF ALL ROOFED AT SAME TIME

$1,213,632

PROJECT PROFILES

University of California, Riverside
WeatherWeld R-16-30-A
Warranty 30 Year NDL

Menifee Union School District School
WeatherWeld R-16-30-M-A
Warranty 30 Year NDL

Anaheim Convention Center
WeatherWeld R-1P-16-45-A & R-16-30-A
Warranty 30 Year NDL

Pomona Valley Hospital
NCNN-1B-16-30-A
Warranty 40 Year NDL

Long Beach Main Library
WeatherWeld R-16-30-A
Warranty 20 Year NDL

State of California Water Resources Building
WeatherWeld W-R-1P-16-45-A
Warranty 20 Year NDL

ROOF REINFORCEMENT SYSTEMS R-16-30-A 40 YEAR WARRANTY

DESCRIPTION

WeatherWeld is a fully seamless reinforced roof system that is designed to reinforce existing roof systems such as built up, modified, and certain types of single ply. WeatherWeld is made to be the strongest roof system on the market. WeatherWeld created a roofing system utilizing the longest lasting and strongest materials in the world combined through a patented 3D printer that creates a seamless reinforced membrane that is super strong, durable, and designed to last for generations.

The seamless roof system combines ceramic asphalt emulsion with intertwined fiberglass, which creates a seamless membrane that is virtually impenetrable.

MATERIALS

The materials used in the WeatherWeld built up/single ply roof restoration system include:

1. Emulsion	WeatherWeld Asphalt Emulsion
2. Fiberglass	WeatherWeld Fiberglass Gun Roving
3. Polyester Ply	Polyester Fabric Reinforcement
4. Base Coat	WeatherWeld Base Coat
5. Top Coat	WeatherWeld Title 24 Top Coat
6. Aluminum Coating	WeatherWeld Aluminum Coating
7. Self-Adhering Membrane	Henry Ruftac 600
8. Asphalt primer	Water Based Asphalt Primer

PHYSICAL PROPERTIES

- System Weight: 1.60 lb. per 100 sq. ft (0.72kg) dry.

APPLICATION EQUIPMENT

1. Graco 1017 Roof Pump with 500' 1" SAE hydraulic hose
2. Towable Air Compressor with 500' ½" air hose
3. Emulsion tanker (delivered to jobsite)
4. WeatherWeld 3D Roof Printer (handheld application machine rented from WeatherWeld on a per job basis)
5. Pressure washer
6. Water hose and water source (enough length to wrap around building)
7. Wet Mil Gauge
8. General PPE
9. General roofing tools

INSTALLATION

Installation of the WeatherWeld system is accomplished in 6 steps:

1. Wash existing roof until clean.
2. Prepare existing built up, modified, single ply roof, seams, fasteners, walls, roof flashings, drains, and penetrations.
3. Install WeatherWeld (spray application).
4. Install reflective coating system (optional).
5. Install flashings, and additional items listed below.
6. Contact WeatherWeld Representative for final inspection.

Prior to installation, ensure that adhesion testing was conducted in accordance with WeatherWeld adhesion testing procedures to verify a minimum adhesion strength of four (4) pounds per linear inch (pli) for WeatherWeld to the applicable substrates. When calculating material requirements for a particular project, consideration must be given to applicator variance and surface texture.

REPAIR

1. All necessary metal seam and flashing repairs must be done according to good construction practices, including the removal of all wet insulation and defective materials as identified through a moisture detection survey, such as an infrared scan and replacement with like materials.
2. All seams must be checked, and any loose or damaged seams or fasteners must be resealed/repaired.
3. Panels rusted through or not structurally sound must be replaced with new panels.
4. Repair blisters, holes, cuts, cracks, splits, or other surface defects with WeatherWeld materials.

WEATHERWELD
a division of Liquiform Technologies Inc.
9757 7th St. #803 Rancho Cucamonga, CA 91730
(888) 440-3224 www.weatherweld.com

PREPARATION

1. Confirm local water run-off ordinances and restrictions prior to cleaning roof.
2. Carefully power wash all roof surfaces with clean water to remove debris, rust, scale, dirt, dust, chalking, peeling, or flaking coatings, etc. Do not force water into the roof system or damage roof surfaces. Rinse at least twice to be sure all cleaning agents or contaminants are completely removed to prevent adhesion issues.
3. If the roof surface becomes contaminated with dirt, dust, or other particles at any time during the application of the WeatherWeld system, cleaning measures must be taken to restore the surface to a suitable condition.
4. Ensure roof is dry prior to application.

FLASHING

NOTE: All flashings must have 500 mills DFT (dry film thickness) of WeatherWeld Composite installed extending 24" in each direction prior to completion of the project.

PERIMETER EDGE ROOF FLASHING SYSTEM: Replace perimeter edge flashing system with new.

Ensure existing roof flashings, including sheet metal flashings, base-flashings, and drains or gutters, are in serviceable condition. If items are installed incorrectly, items should be replaced with new.
The following items are required to be in watertight condition for a WeatherWeld warranty to be issued for the project:

1. Drains and Scuppers
2. Sheetmetal Coping
3. Counter-Flashings
4. Perimeter and Edge flashings
5. Equipment Platforms and Sheetmetal Pans
6. Expansion Joints
7. Sheetmetal Ducts and Seals
8. Electrical Enclosures and Conduits
9. Transition Flashings
10. Any other item that could affect the watertight integrity of the WeatherWeld Seamless Roof System

WEATHERWELD SEAMLESS ROOFING APPLICATION

Apply one layer of the composite roofing at the following ratio:

1. Asphalt Emulsion (undiluted): 30 gal. per 100 square feet (12.2 L/m2).
2. Fiberglass Reinforcement: 16 lb. per 100 square feet (0.78 Kg/m2).

- No water or other material may be added to the emulsion to thin or extend pot life.
- Fiberglass must be disbursed from the applicator in varying intertwined lengths, up to 24 inches (610mm).
- Thoroughly mix fiberglass and emulsion prior to application on roof surface.
- Any loose strands must be brushed by hand, removed or filled-in with emulsion to create a solid surface.
- Upon completion, no area may be less than 250 mil dry film thickness (DFT).
- Install additional material at all roof flashings, 500 mils (DFT) of WeatherWeld composite installed, extending 24" in each direction prior to completion of the project.
- Areas such as base flashings and penetrations, where application exceeds 500 mils wet, must be brushed by hand to prevent surface crazing.

REFLECTIVE COATING INSTALLATION*

Prior to reflective coating application, wash the roof surface with water. Do not commence application until the system has thoroughly dried, as registered by a reading of zero on a calibrated moisture meter.

1. Acrylic Title 24 Coating Application: Apply Title 24 roof coating at a minimum of 1 1/2 gal. per 100 square feet (0.6 L/m2). in each of two passes to total 3 gallons per 100 square feet (1.2 L/m2). Back rolling is recommended to ensure even coverage throughout.
2. Energy Star rated Aluminum Coating Application: Apply Aluminum coating at a minimum of 2 gal. per 100 square feet (1.0 L/m2).

**Reflective coating system is optional. Refer to local codes for Title 24 or Energy Star requirements.*

ROOF ACCESSORIES (INSTALL AFTER REFLECTIVE COATING SYSTEM)
Walkway Pads (optional) or Non-Slip Walking Surface
Polymer Pipe Supports
Storm Collars on Pipes
Coping Caps and Flashings
Access Hatches and Ladders
Drain Rings and Screens

INSPECTION
Inspect entire roof area and touch-up deficient areas with WeatherWeld or reflective coating as necessary to ensure complete and uniform coverage. Special attention should be given to critical areas of roof, including roof penetrations, transitions, existing membrane seams, flashings, and drains.

LIMITATIONS
These are general guidelines for application of the WeatherWeld Seamless Roof System. The material requirements may vary depending on the specific job requirements. If unusual conditions exist, contact your local WeatherWeld Representative.

WeatherWeld Seamless Roof Systems must be applied to structurally sound substrates and properly prepared surfaces. All surfaces must be clean and dry before application of coatings. WeatherWeld Seamless Roof Systems must not be applied over wet insulation or roofing materials. Failure of the substrate does not constitute failure of the WeatherWeld coating or system. WeatherWeld Seamless Roof Systems are designed for use on roofs with positive drainage.

1. Product application must not be done when rain or other conditions such as fog or heavy dew are possible within a 48-hour period.

2. Roof surface must be at least 6 Fahrenheit degrees or 3 Celsius degrees above the dew point and rising. Surfaces must always be clean before application of product. Care must be taken to ensure that debris accumulation after original cleaning does not interfere with any stage of the applications. If either condition occurs, then additional cleaning may be required.

3. Drying time is affected by numerous factors, including temperature, direct sunlight, relative humidity, air movement, thickness, etc. Higher temperature and/or humidity will result in faster cure times. Lower temperature and/or humidity may extend cure times.

4. Do not thin or add water to materials to extend pot life.

5. Proper thickness is essential to performance. The minimum coverage rate of 250 mil DFT (dry film thickness) 1/4" (.250) must be achieved throughout the entire Seamless Roof System assembly and must be verified using a wet mil gauge during application. Multiple coats may be necessary depending on weather and time of year.

6. Deviations from these application guidelines and specific material requirements may seriously affect the roofing system performance and are strictly prohibited.

7. Applicator must comply with all applicable local, state, and federal regulations if lead-based paint or other hazardous materials are encountered.

8. Roofing is hazardous work and coatings are very slippery when wet. Comply with fall protection rules and regulations.

9. Proper PPE including, but not limited to: Safety Glasses, Gloves, N95 Mask, Hardhat, Footwear, and Protective Clothing must be always worn.

COLD WEATHER RESTRICTIONS
Do not attempt application if ice, snow, moisture, or dew is present. Ambient temperature must be 50°F (10°C) and rising through the day. Restrict application when overnight temperature drops below 40°F (4.4°C). Cooler temperatures will negatively impact the properties of the system. Contact your WeatherWeld Representative for proper cold weather applications.

HOT WEATHER RESTRICTIONS
Do not attempt application if moisture or dew is present. Ambient temperature must be less than 110°F (43°C). Contact WeatherWeld Representative for proper hot weather application.

STORAGE
WeatherWeld on the job site should be stored in a shaded ventilated area under a tarp. Do not store in direct sunlight. Storage temperature must range from 60-80°F (15°C to 26°C). Indoor ventilated storage is recommended when ambient temperature is below 60°F (15°C) or above 80°F (26°C).

WARRANTY
40-year Warranty: a written leak free guarantee that covers against roof leaks for 40 years.

Owner responsibilities include ensuring roof drains stay clean and facilitate WeatherWeld roof inspections every 10 years.

**Reflective coatings are not included in WeatherWeld Leak Free Guarantee. Optional reflective coating warranties are available. Contact WeatherWeld Representative.*

For specifics, see the 40-year Warranty sample and Warranty Guide.

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ROOF REINFORCEMENT SYSTEMS R-16-30-M-A 40 YEAR WARRANTY

DESCRIPTION

WeatherWeld is a fully seamless reinforced roof system designed to encapsulate existing metal roof systems such as corrugated and standing seam. WeatherWeld is made to be the strongest roof system on the market. WeatherWeld created a roofing system utilizing the longest lasting and strongest materials in the world combined through a patented 3D printer that creates a seamless reinforced membrane that is super strong, durable, and designed to last for generations.

The encapsulation system combines ceramic asphalt emulsion with intertwined fiberglass, which creates a seamless membrane that is virtually impenetrable.

MATERIALS

The materials used in the WeatherWeld Seamless Roof Encapsulation System include:

1. Emulsion	WeatherWeld Asphalt Emulsion
2. Fiberglass	WeatherWeld Fiberglass Gun Roving
3. Polyester Ply	Polyester Fabric Reinforcement
4. Base Coat	WeatherWeld Base Coat
5. Top Coat	WeatherWeld Title 24 Top Coat
6. Aluminum Coating	WeatherWeld Aluminum Coating
7. Self-Adhering Membrane	Henry Ruftac 600
8. Fiber Cant Strip	Compressed Fiber Cant Strip
9. Cant Strip Adhesive	2 Part Low Rise Foam Adhesive
10. Asphalt primer	Water Based Asphalt Primer

PHYSICAL PROPERTIES

- System Weight: 1.60 lb. per 100 sq. ft (0.72 kg) dry.

APPLICATION EQUIPMENT

1. Graco 1017 Roof Pump with 500' 1" SAE hydraulic hose
2. Towable Air Compressor with 500' ½" air hose
3. Emulsion tanker (delivered to jobsite)
4. WeatherWeld 3D Roof Printer (handheld application machine rented from WeatherWeld on a per job basis)
5. Pressure washer
6. Water hose and water source (enough length to wrap around building)
7. Wet Mil Gauge
8. General PPE
9. General roofing tools

INSTALLATION

Installation of the WeatherWeld system is accomplished in 6 steps:

1. Wash existing roof until clean.
2. Prepare existing metal roof, seams, fasteners, walls, roof flashings, drains, and penetrations.
3. Install WeatherWeld (spray application).
4. Install reflective coating system (optional).
5. Install flashings, and additional items listed below.
6. Contact WeatherWeld Representative for final inspection.

Prior to installation, ensure that adhesion testing was conducted in accordance with WeatherWeld adhesion testing procedures to verify a minimum adhesion strength of four (4) pounds per linear inch (pli) for WeatherWeld to the applicable substrates. When calculating material requirements for a particular project, consideration must be given to applicator variance and surface texture.

REPAIR

1. All necessary metal seam and flashing repairs must be done according to good construction practices, including the removal of all wet insulation and defective materials as identified through a moisture detection survey, such as an infrared scan and replacement with like materials.
2. All seams must be checked, and any loose or damaged seams or fasteners must be resealed/repaired.
3. Panels rusted through or not structurally sound must be replaced with new panels.
4. Repair blisters, holes, cuts, cracks, splits, or other surface defects with WeatherWeld materials.

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PREPARATION

1. Confirm local water run-off ordinances and restrictions prior to cleaning roof.
2. Carefully power wash all roof surfaces with clean water to remove debris, rust, scale, dirt, dust, chalking, peeling, or flaking coatings, etc. Do not force water into the roof system or damage roof surfaces. Rinse at least twice to be sure all cleaning agents or contaminants are completely removed to prevent adhesion issues.
3. If the roof surface becomes contaminated with dirt, dust, or other particles at any time during the application of the WeatherWeld system, cleaning measures must be taken to restore the surface to a suitable condition.
4. Ensure roof is dry prior to application.

STANDING SEAM METAL PANELS (taller than 2.5")

1. Install cant-strip adhered in adhesive on each side of standing seam joint.
2. Ensure gap between cant strip and sheet metal joint is less than 1/8".
3. Taper cant strip at a 45 degree angle, 12" from perimeter edges.

FLASHING

NOTE: All flashings must have 500 mills DFT (dry film thickness) of WeatherWeld Composite installed extending 24" in each direction prior to completion of the project.

PERIMETER EDGE ROOF FLASHING SYSTEM: Replace perimeter edge flashing system with new.

Ensure existing roof flashings, including sheet metal flashings, base-flashings, and drains or gutters, are in serviceable condition. If items are installed incorrectly, items should be replaced with new.

The following items are required to be in watertight condition for a WeatherWeld warranty to be issued for the project:

1. Drains and Scuppers
2. Sheetmetal Coping
3. Counter-Flashings
4. Perimeter and Edge flashings
5. Equipment Platforms and Sheetmetal Pans
6. Expansion Joints
7. Sheetmetal Ducts and Seals
8. Electrical Enclosures and Conduits
9. Transition Flashings
10. Any other item that could affect the watertight integrity of the WeatherWeld Seamless Roof System

WEATHERWELD SEAMLESS ROOFING APPLICATION

Apply one layer of the composite roofing at the following ratio:

1. Asphalt Emulsion (undiluted): 30 gal. per 100 square feet (12.2 L/m2).
2. Fiberglass Reinforcement: 16 lb. per 100 square feet (0.78 Kg/m2).

- No water or other material may be added to the emulsion to thin or extend pot life.
- Fiberglass must be disbursed from the applicator in varying intertwined lengths, up to 24 inches (610mm).
- Thoroughly mix fiberglass and emulsion prior to application on roof surface.
- Any loose strands must be brushed by hand, removed or filled-in with emulsion to create a solid surface.
- Upon completion, no area may be less than 250 mil dry film thickness (DFT).
- Install additional material at all roof flashings, 500 mils (DFT) of WeatherWeld composite installed, extending 24" in each direction prior to completion of the project.
- Areas such as base flashings and penetrations, where application exceeds 500 mils wet, must be brushed by hand to prevent surface crazing.

REFLECTIVE COATING INSTALLATION*

Prior to reflective coating application, wash the roof surface with water. Do not commence application until the system has thoroughly dried, as registered by a reading of zero on a calibrated moisture meter.

1. Acrylic Title 24 Coating Application: Apply Title 24 roof coating at a minimum of 1 1/2 gal. per 100 square feet (0.6 L/m2). in each of two passes to total 3 gallons per 100 square feet (1.2 L/m2). Back rolling is recommended to ensure even coverage throughout.
2. Energy Star rated Aluminum Coating Application: Apply Aluminum coating at a minimum of 2 gal. per 100 square feet (1.0 L/m2).

**Reflective coating system is optional. Refer to local codes for Title 24 or Energy Star requirements.*

ROOF ACCESSORIES (INSTALL AFTER REFLECTIVE COATING SYSTEM)
Walkway Pads (optional) or Non-Slip Walking Surface
Polymer Pipe Supports
Storm Collars on Pipes
Coping Caps and Flashings
Access Hatches and Ladders
Drain Rings and Screens

INSPECTION
Inspect entire roof area and touch-up deficient areas with WeatherWeld or reflective coating as necessary to ensure complete and uniform coverage. Special attention should be given to critical areas of roof, including roof penetrations, transitions, existing membrane seams, flashings, and drains.

LIMITATIONS
These are general guidelines for application of the WeatherWeld Seamless Roof System. The material requirements may vary depending on the specific job requirements. If unusual conditions exist, contact your local WeatherWeld Representative.

WeatherWeld Seamless Metal Roof Systems must be applied to structurally sound substrates and properly prepared surfaces. All surfaces must be clean and dry before application of coatings. WeatherWeld Seamless Roof Systems must not be applied over wet insulation or roofing materials. Failure of the substrate does not constitute failure of the WeatherWeld coating or system. WeatherWeld Seamless Roof Systems are designed for use on roofs with positive drainage.

1. Product application must not be done when rain or other conditions such as fog or heavy dew are possible within a 48-hour period.

2. Roof surface must be at least 6 Fahrenheit degrees or 3 Celsius degrees above the dew point and rising. Surfaces must always be clean before application of product. Care must be taken to ensure that debris accumulation after original cleaning does not interfere with any stage of the applications. If either condition occurs, then additional cleaning may be required.

3. Drying time is affected by numerous factors, including temperature, direct sunlight, relative humidity, air movement, thickness, etc. Higher temperature and/or humidity will result in faster cure times. Lower temperature and/or humidity may extend cure times.

4. Do not thin or add water to materials to extend pot life.

5. Proper thickness is essential to performance. The minimum coverage rate of 250 mil DFT (dry film thickness) 1/4" (.250) must be achieved throughout the entire Seamless Roof System assembly and must be verified using a wet mil gauge during application. Multiple coats may be necessary depending on weather and time of year.

6. Deviations from these application guidelines and specific material requirements may seriously affect the roofing system performance and are strictly prohibited.

7. Applicator must comply with all applicable local, state, and federal regulations if lead-based paint or other hazardous materials are encountered.

8. Roofing is hazardous work and coatings are very slippery when wet. Comply with fall protection rules and regulations.

9. Proper PPE including, but not limited to: Safety Glasses, Gloves, N95 Mask, Hardhat, Footwear, and Protective Clothing must be always worn.

COLD WEATHER RESTRICTIONS
Do not attempt application if ice, snow, moisture, or dew is present. Ambient temperature must be 50°F (10°C) and rising through the day. Restrict application when overnight temperature drops below 40°F (4.4°C). Cooler temperatures will negatively impact the properties of the system. Contact your WeatherWeld Representative for proper cold weather applications.

HOT WEATHER RESTRICTIONS
Do not attempt application if moisture or dew is present. Ambient temperature must be less than 110°F (43°C). Contact WeatherWeld Representative for proper hot weather application.

STORAGE
WeatherWeld on the job site should be stored in a shaded ventilated area under a tarp. Do not store in direct sunlight. Storage temperature must range from 60-80°F (15°C to 26°C). Indoor ventilated storage is recommended when ambient temperature is below 60°F (15°C) or above 80°F (26°C).

WARRANTY
40-year Warranty: a written leak free guarantee that covers against roof leaks for 40 years.

Owner responsibilities include ensuring roof drains stay clean and facilitate roof WeatherWeld inspections every 10 years.

**Reflective coatings are not included in WeatherWeld Leak Free Guarantee. Optional reflective coating warranties are available. Contact WeatherWeld Representative.*

For specifics, see the 40-year Warranty sample and Warranty Guide.

WEATHERWELD
a division of Liquiform Technologies Inc.
9757 7th St. #803 Rancho Cucamonga, CA 91730
(888) 440-3224 www.weatherweld.com

WEATHERWELD

NEW ROOF SYSTEMS | NCNN-1B-16-30-A | 40 YEAR WARRANTY

DESCRIPTION
WeatherWeld is a fully seamless new roof system that is designed for installation as a new roof system installed over a non nailable deck or substrate (such as concrete or insulation). WeatherWeld is made to be the strongest roof system on the market. WeatherWeld created a roofing system utilizing the longest lasting and strongest materials in the world combined through a patented 3D printer that creates a seamless reinforced membrane that is super strong, durable, and designed to last for generations.
The seamless roof system combines ceramic asphalt emulsion with intertwined fiberglass, which creates a seamless membrane that is virtually impenetrable.

MATERIALS
The materials used in the WeatherWeld new roof system application include:

1. Emulsion	WeatherWeld Asphalt Emulsion
2. Fiberglass	WeatherWeld Fiberglass Gun Roving
3. Polyester Ply	Polyester Fabric Reinforcement
4. Insulation	PolyIso Insulation
5. Insulation Facer/Substrate	DensDeck
6. Tapered Insulation	PolyIso (if required)
7. Base Sheet	#75 Mineral-Surfaced Cap Sheet Inverted
8. Base Sheet Fastener	Base Sheet Adhesive/Fastener – FM I-90
9. Base Coat	WeatherWeld Base Coat
10. Top Coat	WeatherWeld Title 24 Top Coat
11. Aluminum Coating	WeatherWeld Aluminum Coating
12. Self-Adhering Membrane	Henry Ruftac 600
13. Asphalt primer	Water Based Asphalt Primer

PHYSICAL PROPERTIES
- System Weight: 2.25 lb. per 100 sq. ft (1.02 kg) dry.

APPLICATION EQUIPMENT
1. Graco 1017 Roof Pump with 500' 1" SAE hydraulic hose
2. Towable Air Compressor with 500' ½" air hose
3. Emulsion tanker (delivered to jobsite)
4. WeatherWeld 3D Roof Printer (handheld application machine rented from WeatherWeld on a per job basis)
5. Pressure washer
6. Water hose and water source (enough length to wrap around building)
7. Wet Mil Gauge
8. General PPE
9. General roofing tools

INSTALLATION
Installation of the WeatherWeld system is accomplished in 7 steps:
1. Install Insulation.
2. Install Base Sheet.
3. Prepare existing seams, fasteners, walls, roof flashings, drains, and penetrations.
4. Install WeatherWeld (spray application).
5. Install reflective coating system (optional).
6. Install flashings, and additional items listed below.
7. Contact WeatherWeld Representative for final inspection.

Prior to installation, ensure that adhesion testing was conducted in accordance with WeatherWeld adhesion testing procedures to verify a minimum adhesion strength of four (4) pounds per linear inch (pli) for WeatherWeld to the applicable substrates. When calculating material requirements for a particular project, consideration must be given to applicator variance and surface texture.

PREPARATION
1. Confirm local water run-off ordinances and restrictions prior to cleaning roof.
2. Install Base Sheet
3. If the roof surface becomes contaminated with dirt, dust, or other particles at any time during the application of the WeatherWeld system, cleaning measures must be taken to restore the surface to a suitable condition.
4. Ensure roof is dry prior to application.

FLASHING
NOTE: All flashings must have 500 mills DFT (dry film thickness) of WeatherWeld Composite installed extending 24" in each direction prior to completion of the project.

The following items are required to be in watertight condition for a WeatherWeld warranty to be issued for the project:
1. Drains and Scuppers
2. Sheetmetal Coping
3. Counter-Flashings
4. Perimeter and Edge flashings
5. Equipment Platforms and Sheetmetal Pans
6. Expansion Joints
7. Sheetmetal Ducts and Seals
8. Electrical Enclosures and Conduits
9. Transition Flashings
10. Any other item that could affect the watertight integrity of the WeatherWeld Seamless Roof System

INSULATION SYSTEM INSTALLATION
Refer to insulation manufactures installation guidelines.
1. Insulation boards: install insulation boards per manufactures installation standards.
2. Tapered Insulation: if specified, adhere to insulation boards.
3. Substrate Board: Install minimum ¼" fiberglass faced gypsum board adhered in adhesive.

BASE SHEET INSTALLATION
1. Install mineral-surfaced cap sheet inverted, lapping 2" on center and 4" at end laps using approved fasteners. The fastening pattern shall meet, at minimum, FM I-90 requirements.

WEATHERWELD SEAMLESS ROOFING APPLICATION
Apply one layer of the composite roofing at the following ratio:
1. Asphalt Emulsion (undiluted): 30 gal. per 100 square feet (12.2 L/m2).
2. Fiberglass Reinforcement: 16 lb. per 100 square feet (0.78 Kg/m2).

- No water or other material may be added to the emulsion to thin or extend pot life.
- Fiberglass must be disbursed from the applicator in varying intertwined lengths, up to 24 inches (610mm).
- Thoroughly mix fiberglass and emulsion prior to application on roof surface.
- Any loose strands must be brushed by hand, removed or filled-in with emulsion to create a solid surface.
- Upon completion, no area may be less than 250 mil dry film thickness (DFT).
- Install additional material at all roof flashings, 500 mils (DFT) of WeatherWeld composite installed, extending 24" in each direction prior to completion of the project.
- Areas such as base flashings and penetrations, where application exceeds 500 mils wet, must be brushed by hand to prevent surface crazing.

REFLECTIVE COATING INSTALLATION*
Prior to reflective coating application, wash the roof surface with water. Do not commence application until the system has thoroughly dried, as registered by a reading of zero on a calibrated moisture meter.
1. Acrylic Title 24 Coating Application: Apply Title 24 roof coating at a minimum of 1 1/2 gal. per 100 square feet (0.6 L/m2), in each of two passes to total 3 gallons per 100 square feet (1.2 L/m2). Back rolling is recommended to ensure even coverage throughout.
2. Energy Star rated Aluminum Coating Application: Apply Aluminum coating at a minimum of 2 gal. per 100 square feet (1.0 L/m2).

**Reflective coating system is optional. Refer to local codes for Title 24 or Energy Star requirements.*

WEATHERWELD
a division of Liquiform Technologies Inc.
9757 7th St. #803 Rancho Cucamonga, CA 91730
(888) 440-3224 www.weatherweld.com

ROOF ACCESSORIES (INSTALL AFTER REFLECTIVE COATING SYSTEM)
Walkway Pads (optional) or Non-Slip Walking Surface
Polymer Pipe Supports
Storm Collars on Pipes
Coping Caps and Flashings
Access Hatches and Ladders
Drain Rings and Screens

INSPECTION
Inspect entire roof area and touch-up deficient areas with WeatherWeld or reflective coating as necessary to ensure complete and uniform coverage. Special attention should be given to critical areas of roof, including roof penetrations, transitions, existing membrane seams, flashings, and drains.

LIMITATIONS
These are general guidelines for application of the WeatherWeld Seamless Roof System. The material requirements may vary depending on the specific job requirements. If unusual conditions exist, contact your local WeatherWeld Representative.

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WeatherWeld Seamless Roof Systems are designed for use on roofs with positive drainage.

1. Product application must not be done when rain or other conditions such as fog or heavy dew are possible within a 48-hour period.
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3. Drying time is affected by numerous factors, including temperature, direct sunlight, relative humidity, air movement, thickness, etc. Higher temperature and/or humidity will result in faster cure times. Lower temperature and/or humidity may extend cure times.
4. Do not thin or add water to materials to extend pot life.
5. Proper thickness is essential to performance. The minimum coverage rate of 250 mil DFT (dry film thickness) 1/4" (.250) must be achieved throughout the entire Seamless Roof System assembly and must be verified using a wet mil gauge during application. Multiple coats may be necessary depending on weather and time of year.
6. Deviations from these application guidelines and specific material requirements may seriously affect the roofing system performance and are strictly prohibited.
7. Applicator must comply with all applicable local, state, and federal regulations if lead-based paint or other hazardous materials are encountered.
8. Roofing is hazardous work and coatings are very slippery when wet. Comply with fall protection rules and regulations.
9. Proper PPE including, but not limited to: Safety Glasses, Gloves, N95 Mask, Hardhat, Footwear, and Protective Clothing must be always worn

COLD WEATHER RESTRICTIONS
Do not attempt application if ice, snow, moisture, or dew is present. Ambient temperature must be 50°F (10°C) and rising through the day. Restrict application when overnight temperature drops below 40°F (4.4°C). Cooler temperatures will negatively impact the properties of the system. Contact your WeatherWeld Representative for proper cold weather applications.

HOT WEATHER RESTRICTIONS
Do not attempt application if moisture or dew is present. Ambient temperature must be less than 110°F (43°C). Contact WeatherWeld Representative for proper hot weather application.

STORAGE
WeatherWeld on the job site should be stored in a shaded ventilated area under a tarp. Do not store in direct sunlight. Storage temperature must range from 60-80°F (15°C to 26°C). Indoor ventilated storage is recommended when ambient temperature is below 60°F (15°C) or above 80°F (26°C).

WARRANTY
40-year Warranty: a written leak free guarantee that covers against roof leaks for 40 years.

Owner responsibilities include ensuring roof drains stay clean and facilitate WeatherWeld roof inspections every 10 years.

**Reflective coatings are not included in WeatherWeld Leak Free Guarantee. Optional reflective coating warranties are available. Contact WeatherWeld Representative.*

For specifics, see the 40-year Warranty sample and Warranty Guide.

WEATHERWELD
a division of Liquiform Technologies Inc.
9757 7th St. #803 Rancho Cucamonga, CA 91730
(888) 440-3224 www.weatherweld.com

WEATHERWELD
ROOFING MADE SIMPLE

Roof Management Report

CENTER UNIFIED SCHOOL DISTRICT

SPINELLI ELEMENTARY SCHOOL

ALTERNATE BUILDINGS (BUILT UP, METAL & SINGLE PLY)
PERMANENT BUILDINGS (METAL & GRAVEL)

Measurements are from aerial survey and do not include roof slope or parapet walls.
This image is for internal use and not to be used for bidding.

Prepared for:

Terra Carlson
Center USD
terra@capitalpm.com
(916) 212-8357

Prepared by:

Nathen Berry
Technical Manager
nathen@weatherweld.com
(909) 727-1239

Scan QR Code

Video / More Information / Next Steps

WEATHERWELD a division of Liquiform Technologies Inc
9757 7th St Suite 803 Rancho Cucamonga, CA 91730 (888) 440-3224

BUILDING SUMMARY

OWNER: Center USD
BUILDING: Spinelli ES - Alternate Portables (Built Up)
ADDRESS: 3401 Scotland Dr, Antelope, CA 95843
CONTACT: Terra Carlson
EMAIL: terra@capitalpm.com
PHONE: (916) 212-8357

ROOFTOP INSPECTION

INSPECTION DATE:	4/16/24	**CORE SAMPLE:**	YES
INSPECTION TYPE:	VISUAL	**DECK CONDITION:**	FAIR
ROOF LEAK DATA:	OWNER	**SOURCE:**	VISUAL

BUILDING INFORMATION

AGE	SQ. FT. (INCLUDING PARAPET WALLS)	ACCESS	SLOPE	HEIGHT
15+ YEARS	3,600	LADDER	1/4" - 12	15 FT

ROOF SYSTEM	TYPE	LAYERS	ATTACHMENT	THICKNESS
DECK:	PLYWOOD	1	MECHANICAL	-
INSULATION:	FIBER BOARD	1		1/2"
EXISTING:	BUILT UP	1	ADHESIVE	-
ADDITIONAL ROOF:	-	-	-	-

DETAILS:

PERIMETER:	DRAINAGE EDGE	-
PERIMETER FLASHING:	EDGE METAL	-
DRAINAGE:	GUTTER	-

ROOFTOP EQUIPMENT/ACCESSORIES	TYPE	QUANTITY
MECHANICAL EQUIPMENT:	-	-
PENETRATIONS:	-	-
SKYLIGHTS:	-	-

EXISTING ROOF TYPE	RATING
DECK:	FAIR
FIELD – EXISTING ROOF:	POOR
FIELD SEAMS – EXISTING ROOF:	POOR
PERIMETER – EXISTING ROOF:	POOR
WALLS:	N/A
DRAINS:	FAIR
SKYLIGHTS:	N/A
COUNTER FLASHING:	N/A
DEBRIS ON ROOF:	NO
PONDING WATER:	NO

LINE ITEMS:

NAME	QTY	APPROX LINE ITEM COST
	-	
	-	
	-	
TOTAL		

WEATHERWELD ROOF SYSTEM	WARRANTY LENGTH	APPROXIMATE TOTAL (+/-15%)
R-16-30-A	40 YEARS	$61,200

Nathen Berry

WEATHERWELD

4/16/2024 | 5 Photos

WEATHERWELD™

ROOFING MADE SIMPLE

Center USD - Spinelli ES, Alternate Portables (Built Up)

This aerial photo shows all sections of the building. The aerial map includes GPS dimensions of the buildings that are included in this report. The areas are outlined in red boxes. These dimensions are the area and size basis of this report.
Measurements are from aerial survey and do not include roof slope. This image is for internal use and not to be used for bidding purposes.

Project: Center USD, Spinelli ES - Alternate Building Built Up Roof Section
Date: 4/16/2024, 10:30pm
Creator: Nathen Berry

The roof was core tested to determine the components of the roofing system from the deck up.
The roof assembly for this building consists of a:
- Plywood Roof Deck
- 1/2" Fiber Board
- Built Up roof

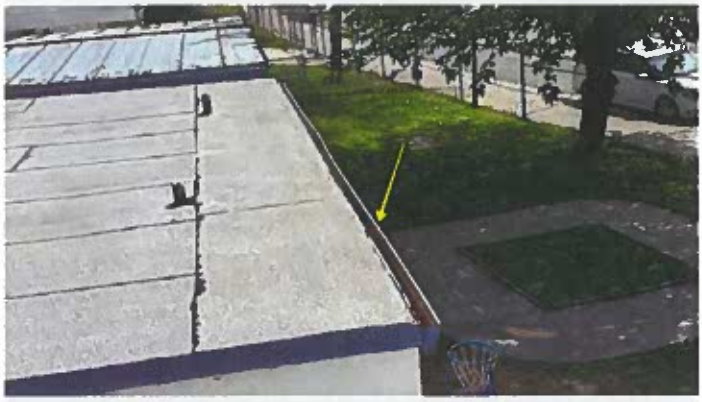
This core test hole was patched and is 100% watertight. The core sample was retained for our internal testing.

Project: Center USD, Spinelli ES - Alternate Building Built Up Roof Section
Date: 4/16/2024, 3:25pm
Creator: Nathen Berry

This type of roof consists of multiple layers of rolls that are made of waterproof with asphalt. Because this type of roof relies on adhesive or asphalt waterproofing in between seams, it is difficult to keep this type of roof water tight as the roof system ages. Considering the age of the roof and the number of penetrations, a permanent solution is required in order to keep this building watertight in the long term.

Project: Center USD, Spinelli ES - Alternate Building Built Up Roof Section
Date: 4/16/2024, 3:29pm
Creator: Nathen Berry

4



The roof drains off the edge into a sheet metal gutter system. The gutter appears to be deteriorating. It is recommended to remove existing gutter and perimeter edge flashing and install new gutter with overlapping perimeter edge flashing system. Color can be chosen by the owner.

Project: Center USD, Spinelli ES - Alternate Building Built Up Roof Section
Date: 4/16/2024, 3:29pm
Creator: Nathen Berry

5

The perimeter of this building consists of a sheet metal edge flashing system. It is recommended to remove all perimeter edge flashings and install a new sheet metal edge flashing system to facilitate seamless roof attachment to perimeter edges.

Project: Center USD, Spinelli ES - Alternate Building Built Up Roof Section
Date: 4/16/2024, 3:29pm
Creator: Nathen Berry

WEATHERWELD a division of Liquiform Technologies Inc
9757 7th St Suite 983 Rancho Cucamonga, CA 91730 (888) 449-3234

BUILDING SUMMARY

OWNER: Center USD
BUILDING: Spinelli ES - Alternate Portables (Metal)
ADDRESS: 3401 Scotland Dr. Antelope, CA 95843
CONTACT: Terra Carlson
EMAIL: terra@capitalpm.com
PHONE: (916) 212-8357

ROOFTOP INSPECTION

INSPECTION DATE:	4/16/24	**CORE SAMPLE:**	NO
INSPECTION TYPE:	VISUAL	**DECK CONDITION:**	FAIR
ROOF LEAK DATA:	OWNER	**SOURCE:**	VISUAL

BUILDING INFORMATION

AGE	SQ. FT. (INCLUDING PARAPET WALLS)	ACCESS	SLOPE	HEIGHT
15+ YEARS	14,400	LADDER	1/4" - 12	15 FT

ROOF SYSTEM	TYPE	LAYERS	ATTACHMENT	THICKNESS
DECK:	METAL	1	MECHANICAL	-
INSULATION:	-	-		-
EXISTING:	STANDING SEAM	1	MECHANICAL	3"
ADDITIONAL ROOF:	-	-	-	-

DETAILS:

PERIMETER:	DRAINAGE EDGE	-
PERIMETER FLASHING:	EDGE METAL	-
DRAINAGE:	GUTTER	-

ROOFTOP EQUIPMENT/ACCESSORIES		TYPE	QUANTITY
MECHANICAL EQUIPMENT:	-	-	-
PENETRATIONS:	PIPES	-	1
SKYLIGHTS:	-		-

EXISTING ROOF TYPE	RATING
DECK:	FAIR
FIELD – EXISTING ROOF:	POOR
FIELD SEAMS – EXISTING ROOF:	POOR
PERIMETER – EXISTING ROOF:	POOR
WALLS:	N/A
DRAINS:	POOR
SKYLIGHTS:	N/A
COUNTER FLASHING:	N/A
DEBRIS ON ROOF:	NO
PONDING WATER:	NO

LINE ITEMS:

NAME	QTY	APPROX LINE ITEM COST
	-	
	-	
	-	
TOTAL		

WEATHERWELD ROOF SYSTEM	WARRANTY LENGTH	APPROXIMATE TOTAL (+/-15%)
R-16-30-M-A	40 YEARS	$273,600

Nathen Berry

WEATHERWELD

4/16/2024 | 8 Photos

Center USD - Spinelli ES, Alternate Portables (Metal)

Center USD - Spinelli ES, Alternate Portables (Metal)

Standing Seam metal is typically installed on modular buildings and used as portable classrooms for public agencies.The discussion below highlights the reasons why these types of roof leak. The solution to eliminate roof leaks from buildings such as portable classrooms is also discussed.

- **Seam Vulnerability:** The primary issue identified during the inspection is the vulnerability of the standing seam design. The crimps at the tops of seams, along with sealants, are crucial for maintaining water tightness. However, over time, expansion and contraction caused by temperature fluctuations, as well as the impact of blowing winds, compromise the integrity of these seams. This compromised integrity leads to water infiltration during rainfall events.
- **Sealant Deterioration:** Sealants play a vital role in preventing water penetration through the seams. However, due to exposure to UV radiation, temperature variations, and general weathering, these sealants degrade over time. As a result, they lose their effectiveness in sealing the seams, contributing to potential leaks.
- **Screw Anchorage Issues:** Another contributing factor to roof leaks is related to the screws that anchor the metal panels to the deck. Over time, these screws may loosen due to structural movement or corrosion, creating gaps through which water can enter the building envelope.
- **Localized Damage:** In addition to the systemic issues mentioned above, localized damage such as dents, punctures, or corrosion spots were observed during the inspection. While these damages may not directly cause leaks, they can exacerbate existing vulnerabilities and compromise the overall integrity of the roof system.

1

This aerial photo shows all sections of the building. The aerial map includes GPS dimensions of the buildings that are included in this report. The areas are outlined in red boxes. These dimensions are the area and size basis of this report.
Measurements are from aerial survey and do not include roof slope. This image is for internal use and not to be used for bidding purposes.

Project: Center USD, Spinelli ES - Alternate Building Metal Roof
Date: 4/16/2024, 10:11pm
Creator: Nathen Berry

2

This roof consists of a metal deck and 3" standing seam metal roof.

Project: Center USD, Spinelli ES - Alternate Building Metal Roof
Date: 4/16/2024, 3:29pm
Creator: Nathen Berry

3

Gutter is plugged with debris, allowing water to pond deteriorating the sheet metal at a rapid pace. The weight of water and overflowing causes damage to the underside overhang. Gutters must be clear and free of debris to allow proper water flow. It is recommended to replace the entire gutter system during roof work.

Project: Center USD, Spinelli ES - Alternate Building Metal Roof
Date: 4/16/2024, 3:29pm
Creator: Nathen Berry

4

Raised metal edges cover exposed edges of standing seams. This detail is prone to leaking. This can be remedied by filling the gap and encapsulating with Weather-Weld.

Project: Center USD, Spinelli ES - Alternate Building Metal Roof
Date: 4/16/2024, 3:29pm
Creator: Nathen Berry

5

Sheet metal caps that connect modular buildings together are called "mod lines." Existing sheet metal will be removed and a custom flashing system will be installed and sealed with WeatherWeld, creating a seamless transition. This allows buildings to move independently while being seamless and watertight.

Project: Center USD, Spinelli ES - Alternate Building Metal Roof
Date: 4/16/2024, 3:22pm
Creator: Nathen Berry

6

The roof drains off the edge into a sheet metal gutter system. The gutter appears to be deteriorating. It is recommended to remove existing gutter and perimeter edge flashing and install new gutter with overlapping perimeter edge flashing system. Color can be chosen by the owner.

Project: Center USD, Spinelli ES - Alternate Building Metal Roof
Date: 4/16/2024, 3:22pm
Creator: Nathen Berry

7

Pipe/cable penetrations through walls could be leaking. Metal hood flashings should be installed.

Project: Center USD, Spinelli ES - Alternate Building Metal Roof
Date: 4/16/2024, 3:22pm
Creator: Nathen Berry

8

New penetrations that have been tied into the existing roof system with repair materials. All penetrations will be properly stripped in with WeatherWeld, with umbrella style storm collars where applicable.

Project: Center USD, Spinelli ES - Alternate Building Metal Roof
Date: 4/16/2024, 3:29pm
Creator: Nathen Berry

WEATHERWELD a division of Layfarm Technologies, Inc
9737 7th St Suite 903 Rancho Cucamonga, CA 91730 (888) 446-3234

BUILDING SUMMARY

OWNER: Center USD
BUILDING: Spinelli ES - Permanent Building (Gravel)
ADDRESS: 3401 Scotland Dr. Antelope, CA
CONTACT: Terra Carlson
EMAIL: terra@capitalpm.com
PHONE: (916) 212-8357

ROOFTOP INSPECTION

INSPECTION DATE:	4/16/24	**CORE SAMPLE:**	YES
INSPECTION TYPE:	VISUAL	**DECK CONDITION:**	FAIR
ROOF LEAK DATA:	OWNER	**SOURCE:**	VISUAL

BUILDING INFORMATION

AGE	SQ. FT. (INCLUDING PARAPET WALLS)	ACCESS	SLOPE	HEIGHT
20+ YEARS	17,834	LADDER	1/2" - 12	15 FT

ROOF SYSTEM	TYPE	LAYERS	ATTACHMENT	THICKNESS
DECK:	PLYWOOD	1	MECHANICAL	-
INSULATION:	FIBER BOARD	1		1/2"
EXISTING:	BUILT UP GRAVEL	1	ADHESIVE	-
ADDITIONAL ROOF:	-	-	-	-

DETAILS:

PERIMETER:	DRAINAGE EDGE	-
PERIMETER FLASHING:	EDGE METAL	-
DRAINAGE:	GUTTER	-

ROOFTOP EQUIPMENT/ACCESSORIES	TYPE	QUANTITY
MECHANICAL EQUIPMENT:	EXHAUST VENT	4
PENETRATIONS:	PIPES	5+
SKYLIGHTS:	-	-

EXISTING ROOF TYPE	RATING
DECK:	FAIR
FIELD – EXISTING ROOF:	POOR
FIELD SEAMS – EXISTING ROOF:	POOR
PERIMETER – EXISTING ROOF:	POOR
WALLS:	N/A
DRAINS:	FAIR
SKYLIGHTS:	N/A
COUNTER FLASHING:	N/A
DEBRIS ON ROOF:	NO
PONDING WATER:	NO

LINE ITEMS:

NAME	QTY	APPROX LINE ITEM COST
	-	
	-	
	-	
TOTAL		

WEATHERWELD ROOF SYSTEM	WARRANTY LENGTH	APPROXIMATE TOTAL (+/-15%)
R-1P-16-45-A	40 YEARS	$356,680

Nathen Berry

WEATHERWELD

4/16/2024 | 7 Photos

WEATHERWELD™

ROOFING MADE SIMPLE

Center USD - Spinelli ES, Permanent Building (Gravel)

This aerial photo shows all sections of the building. The aerial map includes GPS dimensions of the buildings that are included in this report. The areas are outlined in red boxes. These dimensions are the area and size basis of this report.
Measurements are from aerial survey and do not include roof slope. This image is for internal use and not to be used for bidding purposes.

Project: Center USD, Spinelli ES - Permanent Building Gravel Roof Section
Date: 4/16/2024, 10:14pm
Creator: Nathen Berry

Gravel surfacing is installed to protect the waterproofing underneath. As gravel surfacing delaminates exposing the felts and waterproofing underneath, this results in roof leaks and premature failure of the roof.
This visual indication shows the age of the roof, as well as the integrity of the waterproofing underneath.

Project: Center USD, Spinelli ES - Permanent Building Gravel Roof Section
Date: 4/16/2024, 2:54pm
Creator: Nathen Berry

The roof was core tested to determine the components of the roofing system from the deck up.
The roof assembly for this building consists of a:
- Metal Deck
- Insulatiuon
- Fiber Insulation
- Built Up Roof

This core test hole was patched and is 100% watertight. The core sample was retained for our internal testing.

Project: Center USD, Spinelli ES - Permanent Building Gravel Roof Section
Date: 4/16/2024, 2:57pm
Creator: Nathen Berry

Rooftop penetrations such as pipes and vent/exhaust fans need to be repaired often. All penetrations will be encapsulated with WeatherWeld, making a seamless transition between the penetration and the roof. All penetrations get umbrella style storm collar flashings installed above the penetration, "where applicable."

Project: Center USD, Spinelli ES - Permanent Building Gravel Roof Section
Date: 4/16/2024, 2:54pm
Creator: Nathen Berry

Sheet metal ducts and penetrations show signs of deterioration and need to be sealed. WeatherWeld sheet metal duct encapsulation makes ducts strong, solid, and encapsulated, eliminating roof leaks.

Project: Center USD, Spinelli ES - Permanent Building Gravel Roof Section
Date: 4/16/2024, 2:54pm
Creator: Nathen Berry

Flashings and roof accessories mounted flush with the roof are a possible source of roof leaks into buildings. Low mounted accessories need to be removed and replaced with a new roof accessory mounted to a roof curb a minimum 8 inches above the roof level. Existing cap may be encapsulated with WeatherWeld as well.

Project: Center USD, Spinelli ES - Permanent Building Gravel Roof Section
Date: 4/16/2024, 2:55pm
Creator: Nathen Berry

Multi pipe penetrations through the roof create possibility of roof leaks. It is recommended to rework this area, creating flashings at appropriate height to ensure this area is waterproof.

Project: Center USD, Spinelli ES - Permanent Building Gravel Roof Section
Date: 4/16/2024, 2:55pm
Creator: Nathen Berry

WEATHERWELD a division of Liquiform Technologies Inc
9757 7th St Suite 903 Rancho Cucamonga, CA 91730 (888) 440-3234

BUILDING SUMMARY

OWNER: Center USD
BUILDING: Spinelli ES - Permanent Buildings (Metal)
ADDRESS: 3401 Scotland Dr. Antelope, CA 95843
CONTACT: Terra Carlson
EMAIL: terra@capitalpm.com
PHONE: (916) 212-8357

ROOFTOP INSPECTION

INSPECTION DATE:	4/16/24	**CORE SAMPLE:**	NO
INSPECTION TYPE:	VISUAL	**DECK CONDITION:**	FAIR
ROOF LEAK DATA:	OWNER	**SOURCE:**	VISUAL

BUILDING INFORMATION

AGE	SQ. FT. (INCLUDING PARAPET WALLS)	ACCESS	SLOPE	HEIGHT
15+ YEARS	22,727	LADDER	1/4" - 12	15 FT

ROOF SYSTEM	TYPE	LAYERS	ATTACHMENT	THICKNESS
DECK:	METAL	1	MECHANICAL	-
INSULATION:	-	-		-
EXISTING:	METAL - STANDING	1	MECHANICAL	3"
ADDITIONAL ROOF:	-	-	-	-

DETAILS:

PERIMETER:	DRAINAGE EDGE	-
PERIMETER FLASHING:	EDGE METAL	-
DRAINAGE:	GUTTER	-

ROOFTOP EQUIPMENT/ACCESSORIES	TYPE	QUANTITY
MECHANICAL EQUIPMENT:	AC HANDLER UNITS	2
PENETRATIONS:	PIPES	6+
SKYLIGHTS:	-	-

EXISTING ROOF TYPE	RATING
DECK:	FAIR
FIELD – EXISTING ROOF:	POOR
FIELD SEAMS – EXISTING ROOF:	POOR
PERIMETER – EXISTING ROOF:	POOR
WALLS:	N/A
DRAINS:	POOR
SKYLIGHTS:	N/A
COUNTER FLASHING:	N/A
DEBRIS ON ROOF:	YES
PONDING WATER:	NO

LINE ITEMS:

NAME	QTY	APPROX LINE ITEM COST
	-	
	-	
	-	
TOTAL		

WEATHERWELD ROOF SYSTEM	WARRANTY LENGTH	APPROXIMATE TOTAL (+/-15%)
R-16-30-M-A	40 YEARS	$454,540

Nathen Berry

WEATHERWELD

4/16/2024 | 6 Photos

WEATHERWELD™

ROOFING MADE SIMPLE

Center USD - Spinelli ES, Permanent Buildings (Metal)

Center USD - Spinelli ES, Permanent Buildings (Metal)

Standing Seam metal is typically installed on modular buildings and used as portable classrooms for public agencies.The discussion below highlights the reasons why these types of roof leak. The solution to eliminate roof leaks from buildings such as portable classrooms is also discussed.

- **Seam Vulnerability:** The primary issue identified during the inspection is the vulnerability of the standing seam design. The crimps at the tops of seams, along with sealants, are crucial for maintaining water tightness. However, over time, expansion and contraction caused by temperature fluctuations, as well as the impact of blowing winds, compromise the integrity of these seams. This compromised integrity leads to water infiltration during rainfall events.
- **Sealant Deterioration:** Sealants play a vital role in preventing water penetration through the seams. However, due to exposure to UV radiation, temperature variations, and general weathering, these sealants degrade over time. As a result, they lose their effectiveness in sealing the seams, contributing to potential leaks.
- **Screw Anchorage Issues:** Another contributing factor to roof leaks is related to the screws that anchor the metal panels to the deck. Over time, these screws may loosen due to structural movement or corrosion, creating gaps through which water can enter the building envelope.
- **Localized Damage:** In addition to the systemic issues mentioned above, localized damage such as dents, punctures, or corrosion spots were observed during the inspection. While these damages may not directly cause leaks, they can exacerbate existing vulnerabilities and compromise the overall integrity of the roof system.

1

This aerial photo shows all sections of the building. The aerial map includes GPS dimensions of the buildings that are included in this report. The areas are outlined in red boxes. These dimensions are the area and size basis of this report.
Measurements are from aerial survey and do not include roof slope. This image is for internal use and not to be used for bidding purposes.

Project: Center USD, Spinelli ES - Permanent Building Metal Roof
Date: 4/16/2024, 9:59pm
Creator: Nathen Berry

2

This roof consists of metal deck and 3" standing seam metal roof.

Project: Center USD, Spinelli ES - Permanent Building Metal Roof
Date: 4/16/2024, 3:34pm
Creator: Nathen Berry

3

The roof drains off the edge into a sheet metal gutter system. The gutter appears to be deteriorating. It is recommended to remove existing gutter and perimeter edge flashing and install new gutter with overlapping perimeter edge flashing system. Color can be chosen by the owner.

Project: Center USD, Spinelli ES - Permanent Building Metal Roof
Date: 4/16/2024, 3:34pm
Creator: Nathen Berry

4

The ridge cap on this roof is designed to provide transition between roof sections. This design is prone to leaking into the building. WeatherWeld can be installed to encapsulate the ridge vent and make the entire roof watertight.

Project: Center USD, Spinelli ES - Permanent Building Metal Roof
Date: 4/16/2024, 3:34pm
Creator: Nathen Berry

5

Perimeter flashings show signs of separation or delamination joints. This is caused by improper fastening, flashing deterioration, wind, or adhesive failures.
Removal and replacement of all perimeter flashings is recommended.

Project: Center USD, Spinelli ES - Permanent Building Metal Roof
Date: 4/16/2024, 3:32pm
Creator: Nathen Berry

6

Gutter is plugged with debris, allowing water to pond, deteriorating the sheet metal at a rapid pace. Weight of water and overflowing causes damage to the underside overhang. Gutters must be clear and free of debris to allow proper water flow. It is recommended to replace the entire gutter system during roof work.

Project: Center USD, Spinelli ES - Permanent Building Metal Roof
Date: 4/16/2024, 3:34pm
Creator: Nathen Berry

WHAT DOES THIS ROOF NEED TO STAY WATERTIGHT?

Center USD - Spinelli Elementary School
Alternate Portables (Built Up & Metal) & Permanent Buildings (Gravel & Metal)

If your existing roof is in serviceable condition and targeted maintenance will solve roof leaks for the long term, it's recommended to repair the roof and not spend additional money on roof reinforcement or a new roof system.

If maintaining the roof once with targeted maintenance will not keep the building watertight, reinforcing the existing roof with WeatherWeld is the next step.

Certain conditions dictate that the existing roof may not be able to be reinforced. In this case, roof removal would be required.

☐ **TARGETED MAINTENANCE**

It is recommended to perform regular maintenance on this roof using a targeted maintenance plan to repair/seal areas of the roof that could be leaking. WeatherWeld can be installed by hand for small repairs to the existing roof. The owner/facilities manager can perform repairs on their own, or have an approved contractor install WeatherWeld out of buckets. WeatherWeld's Technical Representative will help create a scope of work and assist in creating a plan to get the roof watertight under the targeted maintenance plan.

☒ **REINFORCE EXISTING ROOF**

WeatherWeld is the perfect solution to eliminate the roof leaks on this building. The existing roof can stay in place, and a WeatherWeld roof reinforcement coating system will be installed directly over the existing roof making the entire roof seamless from the top of the parapet wall to the bottom of the drain. This will eliminate all roof leaks. By installing a WeatherWeld roof on this building, the facilities team will have a leak free roof that will require no maintenance for the life of the warranty. You get the benefit of WeatherWeld encapsulating the ductwork and equipment issues all at once. The finished roof will have a white "cool roof" title 24 compliant surface.

☐ **REINFORCE EXISTING ROOF (SILICONE ROOFS)**

Silicone coatings are not compatible with typical roofing materials. The only thing that sticks to silicone, is silicone. The best solution for silicone coated roofs is to tear the roof and start over. When removal is not possible, a new roof system can be installed over the existing roof. For coated standing seam metal, flute fill insulation can be mechanically installed, and a new seamless roof system installed creating a flat roof.

☐ **REMOVE ROOF – INSTALL NEW ROOF SYSTEM**

The following cases indicate that a roof needs to be removed:

1. The building has more than one roof system installed—building code only allows a maximum of two roof systems to be installed on a building.
2. If there is trapped moisture in the roof system
3. Building modernization requires exposing the roof deck
4. Roof drainage needs improvement
5. Roof deck replacement is required on a large scale.

☐ **REMOVE TOP ROOF LAYER – INSTALL NEW ROOF SYSTEM**

Remove top roof layer, leave the original roof in place. In some cases, the original roof system would be a candidate for WeatherWeld roof reinforcement and would count as a roof coating system. For this instance, remove only the top layer, leaving the original roof system. Once the top roof is removed, prepare the original roof, and install WeatherWeld seamless roof reinforcement.

☐ **REMOVE EXISTING ROOF – REUSE EXISTING INSULATION**

Remove the existing roof and reuse existing insulation. If roofing systems requires removal but existing roof insulation can be reused, attach a ½" gypsum substrate board and install a WeatherWeld new roof reinforcement system.

WEATHERWELD a division of Liquiform Technologies, Inc.
9767 7th St Suite 803 Rancho Cucamonga, CA 91730 (888) 440-3224

BUILDING SUMMARY

OWNER: Center USD
BUILDING: Spinelli ES - Alternate Portables (Single Ply)
ADDRESS: 3401 Scotland Dr. Antelope, CA 95843
CONTACT: Terra Carlson
EMAIL: terra@capitalpm.com
PHONE: (916) 212-8357

ROOFTOP INSPECTION

INSPECTION DATE:	4/16/24	CORE SAMPLE:	NO
INSPECTION TYPE:	VISUAL	DECK CONDITION:	FAIR
ROOF LEAK DATA:	OWNER	SOURCE:	VISUAL

BUILDING INFORMATION

AGE	SQ. FT. (INCLUDING PARAPET WALLS)	ACCESS	SLOPE	HEIGHT
15+ YEARS	9,600	LADDER	1/4" - 12	15 FT

ROOF SYSTEM	TYPE	LAYERS	ATTACHMENT	THICKNESS
DECK:	METAL	1	MECHANICAL	-
INSULATION:	FOAM	1		1 1/2"
EXISTING:	SINGLE PLY	1	MECHANICAL	-
ADDITIONAL ROOF:	STANDING SEAM	1	MECHANICAL	-

DETAILS:

PERIMETER:	DRAINAGE EDGE	-
PERIMETER FLASHING:	EDGE METAL	-
DRAINAGE:	GUTTER	-

EXISTING ROOF TYPE	RATING
DECK:	FAIR
FIELD – EXISTING ROOF:	POOR
FIELD SEAMS – EXISTING ROOF:	POOR
PERIMETER – EXISTING ROOF:	POOR
WALLS:	N/A
DRAINS:	POOR
SKYLIGHTS:	N/A
COUNTER FLASHING:	N/A
DEBRIS ON ROOF:	YES
PONDING WATER:	NO

ROOFTOP EQUIPMENT/ACCESSORIES	TYPE	QUANTITY
MECHANICAL EQUIPMENT:	-	-
PENETRATIONS:	-	-
SKYLIGHTS:	-	-

LINE ITEMS:

NAME	QTY	APPROX LINE ITEM COST
	-	
	-	
	-	
TOTAL		

WEATHERWELD ROOF SYSTEM	WARRANTY LENGTH	APPROXIMATE TOTAL (+/-15%)
NCNN-1B-16-30-A	40 YEARS	$172,800

Nathen Berry

WEATHERWELD

4/16/2024 | 6 Photos

Center USD - Spinelli ES, Alternate Portables (Single Ply)

1

This aerial photo shows all sections of the building. The aerial map includes GPS dimensions of the buildings that are included in this report. The areas are outlined in red boxes. These dimensions are the area and size basis of this report.
Measurements are from aerial survey and do not include roof slope. This image is for internal use and not to be used for bidding purposes.

Project: Center USD, Spinelli ES - Alternate Single Ply Portables
Date: 4/16/2024, 9:33pm
Creator: Nathen Berry

2

Single ply membranes installed on roofs consist of thin synthetic membranes that are typically between 30 and 80 mils thick.
For reference, these materials range in thickness between a dime and a nickel.
Thin wide sheets of plastic material are fastened or adhered to the roof deck at edges of the sheets then welded at the edges with a 500° hot air welder.
Typical problems with thin plastic synthetic membranes consist of the following:

- Uv deterioration of plastic membrane
- Material shrinkage
- Delamination of welds/joints
- Requirement of repair material at penetrations
- Thermal bridging at metal fastener plates

Project: Center USD, Spinelli ES - Alternate Single Ply Portables
Date: 4/16/2024, 3:10pm
Creator: Nathen Berry

3

The roof was core tested to determine the components of the roofing system from the deck up.
The roof assembly for this building consists of a:
- Sheet Metal Roof Deck
- Foam Flute Fill
- Gypsum Board
- Single Ply Roof Membrane

This core test hole was patched and is 100% watertight. The core sample was retained for our internal testing.

Project: Center USD, Spinelli ES - Alternate Single Ply Portables
Date: 4/16/2024, 3:12pm
Creator: Nathen Berry

4

The roof drains off the edge into a sheet metal gutter system. The gutter appears to be in usable condition. It is recommended to leave the existing gutter in place. Existing termination flashing will be removed and replaced with a new edge flashing system.

Project: Center USD, Spinelli ES - Alternate Single Ply Portables
Date: 4/16/2024, 3:08pm
Creator: Nathen Berry

5

Perimeter edge flashings consists of sheet metal termination edge flashings. Perimeter flashings typically leak as roof materials shrink and separate from metal flashings. Existing perimeter flashings will be removed and new perimeter edge flashing systems will be installed to create triple redundancy.

Project: Center USD, Spinelli ES - Alternate Single Ply Portables
Date: 4/16/2024, 3:08pm
Creator: Nathen Berry

6

Roof assembly will be removed to the roof deck. New WeatherWeld roof system will be installed.

Project: Center USD, Spinelli ES - Alternate Single Ply Portables
Date: 4/16/2024, 3:10pm
Creator: Nathen Berry

WHAT DOES THIS ROOF NEED TO STAY WATERTIGHT?

Center USD - Spinelli Elementary School, Alternate Portables (Single Ply)

If your existing roof is in serviceable condition and targeted maintenance will solve roof leaks for the long term, it's recommended to repair the roof and not spend additional money on roof reinforcement or a new roof system.

If maintaining the roof once with targeted maintenance will not keep the building watertight, reinforcing the existing roof with WeatherWeld is the next step.

Certain conditions dictate that the existing roof may not be able to be reinforced. In this case, roof removal would be required.

☐ **TARGETED MAINTENANCE**

It is recommended to perform regular maintenance on this roof using a targeted maintenance plan to repair/seal areas of the roof that could be leaking. WeatherWeld can be installed by hand for small repairs to the existing roof. The owner/facilities manager can perform repairs on their own, or have an approved contractor install WeatherWeld out of buckets. WeatherWeld's Technical Representative will help create a scope of work and assist in creating a plan to get the roof watertight under the targeted maintenance plan.

☐ **REINFORCE EXISTING ROOF**

WeatherWeld is the perfect solution to eliminate the roof leaks on this building. The existing roof can stay in place, and a WeatherWeld roof reinforcement coating system will be installed directly over the existing roof making the entire roof seamless from the top of the parapet wall to the bottom of the drain. This will eliminate all roof leaks. By installing a WeatherWeld roof on this building, the facilities team will have a leak free roof that will require no maintenance for the life of the warranty. You get the benefit of WeatherWeld encapsulating the ductwork and equipment issues all at once. The finished roof will have a white "cool roof" title 24 compliant surface.

☐ **REINFORCE EXISTING ROOF (SILICONE ROOFS)**

Silicone coatings are not compatible with typical roofing materials. The only thing that sticks to silicone, is silicone. The best solution for silicone coated roofs is to tear the roof and start over. When removal is not possible, a new roof system can be installed over the existing roof. For coated standing seam metal, flute fill insulation can be mechanically installed, and a new seamless roof system installed creating a flat roof.

☒ **REMOVE ROOF – INSTALL NEW ROOF SYSTEM**

The following cases indicate that a roof needs to be removed:

1. The building has more than one roof system installed—building code only allows a maximum of two roof systems to be installed on a building.
2. If there is trapped moisture in the roof system
3. Building modernization requires exposing the roof deck
4. Roof drainage needs improvement
5. Roof deck replacement is required on a large scale.

☐ **REMOVE TOP ROOF LAYER – INSTALL NEW ROOF SYSTEM**

Remove top roof layer, leave the original roof in place. In some cases, the original roof system would be a candidate for WeatherWeld roof reinforcement and would count as a roof coating system. For this instance, remove only the top layer, leaving the original roof system. Once the top roof is removed, prepare the original roof, and install WeatherWeld seamless roof reinforcement.

☐ **REMOVE EXISTING ROOF – REUSE EXISTING INSULATION**

Remove the existing roof and reuse existing insulation. If roofing systems requires removal but existing roof insulation can be reused, attach a ½" gypsum substrate board and install a WeatherWeld new roof reinforcement system.

WHY ROOFS FAIL

WHY DOES THE EXISTING ROOF FAIL?

Roofing systems fail for various reasons in a western climate like California. The following are examples of common failures.

Physical Effects

- UV Exposure: The primary reason for roofing failure is UV exposure. The Sun deteriorates roofing membranes faster than other climate regions.
- Thermal expansion and contraction: with an average temperature swing of 30 degrees, buildings cycle a minimum of 2 times a day. Over time, this creates concentrated stress on roofing materials.
- Age: All roofs deteriorate with age. When you combine the factors above, roofs dry out and become brittle, seams degrade, and roof systems lose the ability to keep the building waterproof.

Existing Roof Types and Common Issues

Built-up roof: layers of felt saturated in asphalt is one of the oldest types of roofing. As built-up roofs age, UV exposure dries out asphalt, making it brittle. This causes the roof to lose strength and elongation after approximately 10 years.
The following observations can help determine the condition of built-up roofs through visual inspection:

- Micro granules piled up near roof drains
- Exposed fiberglass felt in the field of the roof
- Ridging, buckling, or blistering in the roof system.
- Material shrinkage at intersections and base flashings

Modified built-up roofs have the same observations above and close inspection could show UV damage creating micro fractures in the roof membrane.

Gravel surfaced built-up roofs have the same observations above except damage is hidden due to the roof being covered with loose gravel—inspect carefully.

Single ply roofs: thin layers of plastic rolled out, creating a plastic membrane, must be seamed/welded by hand in the field. Rolls are designed to be installed on flat surfaces with no penetrations. Material ranges between 30 and 70 mills (extremely thin), depending on plastic membrane type. The life cycle of plastic roof membranes varies drastically on the type of plastic and the location where material is installed. A perfectly installed single ply in perfect climate might last 20 years. However, results are not typical, and life cycle varies. Single ply roofs fail for various reasons. The following observations can help determine the condition of single ply roofs through visual inspection:

- Chalking or cracking on the surface of the membrane
- Loose or delaminated seams
- Exposed scrim/fabric reinforcement
- Burn through at roof fasteners (discoloration at fasteners and plates)
- Fluttering of membrane in windy conditions
- Discoloration and other types of surface changes in plastic membrane
- Material shrinkage at intersections and base flashings

Foam and coating roofs: Spray applied foam relies on the surface coating to protect the foam underneath. As soon as the thin surface coating wears away, foam absorbs water and basically turns it into a sponge. Foam roofs require recoating the foam on a maintenance plan (5-10 years). Foam should be considered a roof maintenance system because these types of roofs are only as watertight as the thin coating on top. The following observations can help determine the condition of foam roofs through visual inspection:

- Deterioration of surface coating exposing foam insulation underneath
- Blisters in foam layers
- Wet sponge-like areas where water is saturated into foam insulation
- Holes in roof where animals peck holes in roof surface
- Uneven application inhibiting water drainage

Metal roofs: roofs with standing seam or corrugated metal rely on overlapped/crimped sheet metal panels to remain watertight. In most cases, sheet metal panels are not the cause of roof leaks. Building movement, UV deterioration of waterproofing seals, and unsealed fasteners create roof leaks. In rare occurrences, oxidation or deterioration of surface coatings corrodes the sheet metal creating rust and holes in the panel itself. The following observations can help determine the condition of metal roofs through visual inspection:

- Exposed sheet metal seams
- Failed repair material seals at seams, penetrations, and joints
- Backed out fasteners with deteriorated rubber gaskets
- Oxidation/rust in panels

HOW DO I KNOW WHEN TO REPLACE MY ROOF?

If the roof can be repaired to get the roof watertight, repair the roof. If repair won't solve all the roof problems or repair would be too extensive, roof reinforcement of the entire roof is recommended.

In some cases, legally or structurally, where the roof cannot be reinforced, removal may be required to start with a new roof system.

OPTIONS

WHAT ARE THE OPTIONS FOR REPLACEMENT OF MY ROOF?

Remove and replace the entire roof system
Most roofs with only one layer installed do not require removal. A roof needs to be removed only if there is underlying deck damage, moisture, or design defect in the existing roof system. Buildings that have two roof systems/layers installed, must be removed because building code doesn't allow more than two layers of roofing on a building. Roof removal also requires a minimum R-Value requirement to meet CA Title 24. This cost could be significant considering the cost of removal and flashing height increases, plus the cost of disruption to the building and its occupants. This is the worst-case scenario and only recommended when required.

Reinforce the existing roof
Your existing roof leaks because the roofing system has lost its ability to keep the roof watertight. This could be due to uv exposure, moisture in the roofing system, failing seams, or improper installation from the start. Overall, most roofs over 10 years old have lost the strength required to remain watertight.

Seamless Roof Reinforcement is stronger than the existing roof was when it was new. WeatherWeld takes place of the existing roof, creating a seamless reinforced membrane designed to encapsulate most existing roofs from the top of a wall continuously into the drain, making roof leaks impossible.

OTHER ROOFING OPTIONS - WHATS THE DIFFERENCE?

"ROOF RESTORATION"
There is no such thing. Age affects roofs the same way it affects people and everything else. You can't make something old into something new. Plasticizers will not regenerate within the materials, and the tensile strength lost through cycle fatigue will not return. The laws of physics always trump the promises of marketing. Cool roof coatings and "restoration" products are marketing hoaxes—they can't penetrate the existing substrate matrix at any meaningful depth and are not thick enough to be resilient long term.

COATINGS
Elastomeric and silicone are another false hope. Coating a roof does nothing but cover the roof in its existing condition with a layer of paint. The "guarantees" that are issued on these systems usually cover only material, not leaks. We have seen many 50-year silicone guarantees, but have never seen a silicone roof last a warranty length still in service.

SINGLE PLY
Single ply is a product that must be patched and repaired from the start. Typical installations with TPO and PVC last less than 15 years in the Western United States. Plastic sheets must be unrolled and welded with a hot air welder at every seam. This creates the possibility for human error.

Every seam must be physically inspected because you are left with a thin sheet of plastic with miles of welds and patches on a typical roof. The sun degrades synthetic materials at unpredictable rates, and this means the lifecycle of synthetic materials are hard to judge. This is the reason why most single plies are reformulated repeatedly.

WHAT TO LOOK FOR WHEN CHOOSING A ROOF

A long-term solution to keep the roof watertight should have the following characteristics:

SEAMLESS: The existing roof leaks because it has seams. Water finds a seam and leaks into your building. Theoretically, if a roof is seamless, there would be no place for it to leak.

STRONG: A roof must be strong enough to withstand thermal movement.

DURABLE: The seamless membrane must be resistant to rooftop traffic, debris on the roof, and rooftop equipment.

TIME TESTED: The product must have a real track record of successful performance in real life applications, not just accelerated weathering tests in a lab. Note that most single ply and coatings have not been around for a warranty period.

GUARANTEED: An NDL warranty that covers labor, material, and repairs, for the life of the warranty. Most warranties cover material but not labor; the fine print with warranty exclusions lets manufacturers escape liability.

AFFORDABLE: Add up the cost of the roof, including maintenance and replacement over 40 years. Why 40 years? Because most buildings will be here 40 years from now. When you choose roof systems that are designed to last with minimal maintenance, the lifecycle cost is lower.

WeatherWeld is a roof designed to withstand the elements and provide a leak free roof for generations. More than 30 years ago, WeatherWeld created a seamless roof system designed to reinforce existing roofs by combining the strongest long-lasting materials in the world. By combining ceramic emulsion and intertwined fiberglass together, the seamless membrane encapsulates the entire roof from the top of the wall to the bottom of the drain.

CHARACTERISTICS OF WEATHERWELD

SEAMLESS: WeatherWeld makes your roof one seamless encapsulated membrane.

STRONG: WeatherWeld is reinforced with unbelievable amounts of long strand fiberglass, which creates a membrane that you can literally drive a truck on.

DURABLE: WeatherWeld is resistant to rooftop traffic and damage.

ROBUST: WeatherWeld is thick and durable; when you see it, you'll be able to tell why it lasts so long.

TIME TESTED: WeatherWeld is one of the only roofs in the world that has lasted a warranty length and is still in excellent condition; 30+ years and still doing its job of keeping buildings watertight.

GUARANTEED: The real warranty in a roof is in the product. Don't buy based on marketing materials. Rather, buy a product that you can see will last. WeatherWeld comes with an industry leading 40-year NDL warranty that's simple: **"IF IT LEAKS, WE FIX IT."**

AFFORDABLE: The cheapest most cost-effective way for you to have a leak-free roof for generations, is to buy the right roof the first time; a roof that won't require maintenance or replacement.

SAFE: Using environmentally friendly materials that are water based, there is very little smell and disruption during installation. Most school and healthcare clients install WeatherWeld when buildings are occupied, with no complaints.

WHAT YOU GET WHEN YOU BUY WEATHERWELD

WeatherWeld:

- **Is ¼" thick, made of strong and durable materials.**
  Coatings and restoration systems are thin and weak
- **Comes with a 40-year NDL warranty.**
  Coatings and restoration systems offer warranties between 10 and 20 years, and they HAVE EXCLUSIONS for your type of roof.
- **Is seamless. It's one encapsulated piece from the top of the wall to the bottom of the drain.**
  Coatings and restoration systems are reinforced with a thin weak piece of polyester; some are not even reinforced. Unreinforced means not strong, and roof movement will continue (this means the roof will still leak).
- **Comes with turnkey support. With WeatherWeld, you get a dedicated technical team that is available 24/7 to ensure your WeatherWeld roof will last for generations. You get everything from reports, diagnostics, on-site inspections, etc.**
  Coatings and restoration companies either have zero technical support or they charge for inspection and services—you deserve a simple process from start to finish.
- **Is simple to repair. When you need to put new equipment or penetrations on the roof, repairing WeatherWeld is simple. WeatherWeld repair is available in a bucket that you or your maintenance team can install by hand. Simply contact us, and problem solved!**
- **Requires no maintenance. All you have to do is keep the drains clear.**

BUDGET

CENTER USD - SPINELLI ELEMENTARY SCHOOL

The roof budget below is designed to give a building owner or facilities managers a budget, or a range of what a roof system should cost. **WeatherWeld is a roof system manufacturer, and we do not provide full roof installations as a contractor.** This budget is based on an approximate estimate of what a licensed and approved WeatherWeld contractor will bid for the roof project including labor, material, warranty, and ancillary services. This budget is a projected estimate valid for the next 30 days. Actual budgets and pricing may vary based on material price increases, inflation, availability, and contractor profit margins, etc.

BUDGETS ARE ESTIMATE RANGES AND MAY VARY BY +/- 15%

	ALTERNATE PORTABLES (BUILT UP)	ALTERNATE PORTABLES (METAL)	PERMANENT BUILDINGS (GRAVEL)	PERMANENT BUILDINGS (METAL)	ALTERNATE PORTABLES (SINGLE PLY)	TOTAL
WEATHERWELD SPECIFICATION	R-16-30-A	R-16-30-M-A	R-1P-16-45-A	R-16-30-M-A	NCNN-1B-16-30-A	
WARRANTY LENGTH	40 YRS	40 YRS	40 YRS	40 YRS	40 YRS	
APPROX. ROOF AREA (INCL PARAPET WALLS)	3,600	14,400	17,834	22,727	9,600	68,161
PRICE PER SQ FT	$17	$19	$20	$20	$18	
LINE-ITEM TOTAL						
GRAND TOTAL	$61,200	$273,600	$356,680	$454,540	$172,800	$1,318,820

APPROXIMATE PRICE PER FOOT INSTALLED FOR 40 YEAR ROOF SYSTEM

$19.35 PER FOOT

APPROXIMATE TOTAL FOR ROOFING PROJECT IF ROOFED AT THE SAME TIME

$1,318,820

LIQUIFORM TECHNOLOGIES INC. 9757 7TH STREET. SUITE 803. RANCHO CUCAMONGA CA. 91730.
(888) 440-3224. www.weatherweld.com

PROJECT PROFILES

University of California, Riverside
WeatherWeld R-16-30-A
Warranty 30 Year NDL

Menifee Union School District School
WeatherWeld R-16-30-M-A
Warranty 30 Year NDL

Anaheim Convention Center
WeatherWeld R-1P-16-45-A & R-16-30-A
Warranty 30 Year NDL

Pomona Valley Hospital
NCNN-1B-16-30-A
Warranty 40 Year NDL

Long Beach Main Library
WeatherWeld R-16-30-A
Warranty 20 Year NDL

State of California Water Resources Building
WeatherWeld W-R-1P-16-45-A
Warranty 20 Year NDL

ROOF REINFORCEMENT SYSTEMS R-16-30-A 40 YEAR WARRANTY

DESCRIPTION

WeatherWeld is a fully seamless reinforced roof system that is designed to reinforce existing roof systems such as built up, modified, and certain types of single ply. WeatherWeld is made to be the strongest roof system on the market. WeatherWeld created a roofing system utilizing the longest lasting and strongest materials in the world combined through a patented 3D printer that creates a seamless reinforced membrane that is super strong, durable, and designed to last for generations.

The seamless roof system combines ceramic asphalt emulsion with intertwined fiberglass, which creates a seamless membrane that is virtually impenetrable.

MATERIALS

The materials used in the WeatherWeld built up/single ply roof restoration system include:

1. Emulsion	WeatherWeld Asphalt Emulsion
2. Fiberglass	WeatherWeld Fiberglass Gun Roving
3. Polyester Ply	Polyester Fabric Reinforcement
4. Base Coat	WeatherWeld Base Coat
5. Top Coat	WeatherWeld Title 24 Top Coat
6. Aluminum Coating	WeatherWeld Aluminum Coating
7. Self-Adhering Membrane	Henry Ruftac 600
8. Asphalt primer	Water Based Asphalt Primer

PHYSICAL PROPERTIES

- System Weight: 1.60 lb. per 100 sq. ft (0.72kg) dry.

APPLICATION EQUIPMENT

1. Graco 1017 Roof Pump with 500' 1" SAE hydraulic hose
2. Towable Air Compressor with 500' ½" air hose
3. Emulsion tanker (delivered to jobsite)
4. WeatherWeld 3D Roof Printer (handheld application machine rented from WeatherWeld on a per job basis)
5. Pressure washer
6. Water hose and water source (enough length to wrap around building)
7. Wet Mil Gauge
8. General PPE
9. General roofing tools

INSTALLATION

Installation of the WeatherWeld system is accomplished in 6 steps:

1. Wash existing roof until clean.
2. Prepare existing built up, modified, single ply roof, seams, fasteners, walls, roof flashings, drains, and penetrations.
3. Install WeatherWeld (spray application).
4. Install reflective coating system (optional).
5. Install flashings, and additional items listed below.
6. Contact WeatherWeld Representative for final inspection.

Prior to installation, ensure that adhesion testing was conducted in accordance with WeatherWeld adhesion testing procedures to verify a minimum adhesion strength of four (4) pounds per linear inch (pli) for WeatherWeld to the applicable substrates. When calculating material requirements for a particular project, consideration must be given to applicator variance and surface texture.

REPAIR

1. All necessary metal seam and flashing repairs must be done according to good construction practices, including the removal of all wet insulation and defective materials as identified through a moisture detection survey, such as an infrared scan and replacement with like materials.
2. All seams must be checked, and any loose or damaged seams or fasteners must be resealed/repaired.
3. Panels rusted through or not structurally sound must be replaced with new panels.
4. Repair blisters, holes, cuts, cracks, splits, or other surface defects with WeatherWeld materials.

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PREPARATION

1. Confirm local water run-off ordinances and restrictions prior to cleaning roof.
2. Carefully power wash all roof surfaces with clean water to remove debris, rust, scale, dirt, dust, chalking, peeling, or flaking coatings, etc. Do not force water into the roof system or damage roof surfaces. Rinse at least twice to be sure all cleaning agents or contaminants are completely removed to prevent adhesion issues.
3. If the roof surface becomes contaminated with dirt, dust, or other particles at any time during the application of the WeatherWeld system, cleaning measures must be taken to restore the surface to a suitable condition.
4. Ensure roof is dry prior to application.

FLASHING

NOTE: All flashings must have 500 mills DFT (dry film thickness) of WeatherWeld Composite installed extending 24" in each direction prior to completion of the project.

PERIMETER EDGE ROOF FLASHING SYSTEM: Replace perimeter edge flashing system with new.

Ensure existing roof flashings, including sheet metal flashings, base-flashings, and drains or gutters, are in serviceable condition. If items are installed incorrectly, items should be replaced with new.
The following items are required to be in watertight condition for a WeatherWeld warranty to be issued for the project:

1. Drains and Scuppers
2. Sheetmetal Coping
3. Counter-Flashings
4. Perimeter and Edge flashings
5. Equipment Platforms and Sheetmetal Pans
6. Expansion Joints
7. Sheetmetal Ducts and Seals
8. Electrical Enclosures and Conduits
9. Transition Flashings
10. Any other item that could affect the watertight integrity of the WeatherWeld Seamless Roof System

WEATHERWELD SEAMLESS ROOFING APPLICATION

Apply one layer of the composite roofing at the following ratio:

1. Asphalt Emulsion (undiluted): 30 gal. per 100 square feet (12.2 L/m2).
2. Fiberglass Reinforcement: 16 lb. per 100 square feet (0.78 Kg/m2).

- No water or other material may be added to the emulsion to thin or extend pot life.
- Fiberglass must be disbursed from the applicator in varying intertwined lengths, up to 24 inches (610mm).
- Thoroughly mix fiberglass and emulsion prior to application on roof surface.
- Any loose strands must be brushed by hand, removed or filled-in with emulsion to create a solid surface.
- Upon completion, no area may be less than 250 mil dry film thickness (DFT).
- Install additional material at all roof flashings, 500 mils (DFT) of WeatherWeld composite installed, extending 24" in each direction prior to completion of the project.
- Areas such as base flashings and penetrations, where application exceeds 500 mils wet, must be brushed by hand to prevent surface crazing.

REFLECTIVE COATING INSTALLATION*

Prior to reflective coating application, wash the roof surface with water. Do not commence application until the system has thoroughly dried, as registered by a reading of zero on a calibrated moisture meter.

1. Acrylic Title 24 Coating Application: Apply Title 24 roof coating at a minimum of 1 1/2 gal. per 100 square feet (0.6 L/m2). in each of two passes to total 3 gallons per 100 square feet (1.2 L/m2). Back rolling is recommended to ensure even coverage throughout.
2. Energy Star rated Aluminum Coating Application: Apply Aluminum coating at a minimum of 2 gal. per 100 square feet (1.0 L/m2).

**Reflective coating system is optional. Refer to local codes for Title 24 or Energy Star requirements.*

ROOF ACCESSORIES (INSTALL AFTER REFLECTIVE COATING SYSTEM)
Walkway Pads (optional) or Non-Slip Walking Surface
Polymer Pipe Supports
Storm Collars on Pipes
Coping Caps and Flashings
Access Hatches and Ladders
Drain Rings and Screens

INSPECTION
Inspect entire roof area and touch-up deficient areas with WeatherWeld or reflective coating as necessary to ensure complete and uniform coverage. Special attention should be given to critical areas of roof, including roof penetrations, transitions, existing membrane seams, flashings, and drains.

LIMITATIONS
These are general guidelines for application of the WeatherWeld Seamless Roof System. The material requirements may vary depending on the specific job requirements. If unusual conditions exist, contact your local WeatherWeld Representative.

WeatherWeld Seamless Roof Systems must be applied to structurally sound substrates and properly prepared surfaces. All surfaces must be clean and dry before application of coatings. WeatherWeld Seamless Roof Systems must not be applied over wet insulation or roofing materials. Failure of the substrate does not constitute failure of the WeatherWeld coating or system. WeatherWeld Seamless Roof Systems are designed for use on roofs with positive drainage.

1. Product application must not be done when rain or other conditions such as fog or heavy dew are possible within a 48-hour period.

2. Roof surface must be at least 6 Fahrenheit degrees or 3 Celsius degrees above the dew point and rising. Surfaces must always be clean before application of product. Care must be taken to ensure that debris accumulation after original cleaning does not interfere with any stage of the applications. If either condition occurs, then additional cleaning may be required.

3. Drying time is affected by numerous factors, including temperature, direct sunlight, relative humidity, air movement, thickness, etc. Higher temperature and/or humidity will result in faster cure times. Lower temperature and/or humidity may extend cure times.

4. Do not thin or add water to materials to extend pot life.

5. Proper thickness is essential to performance. The minimum coverage rate of 250 mil DFT (dry film thickness) 1/4" (.250) must be achieved throughout the entire Seamless Roof System assembly and must be verified using a wet mil gauge during application. Multiple coats may be necessary depending on weather and time of year.

6. Deviations from these application guidelines and specific material requirements may seriously affect the roofing system performance and are strictly prohibited.

7. Applicator must comply with all applicable local, state, and federal regulations if lead-based paint or other hazardous materials are encountered.

8. Roofing is hazardous work and coatings are very slippery when wet. Comply with fall protection rules and regulations.

9. Proper PPE including, but not limited to: Safety Glasses, Gloves, N95 Mask, Hardhat, Footwear, and Protective Clothing must be always worn.

COLD WEATHER RESTRICTIONS
Do not attempt application if ice, snow, moisture, or dew is present. Ambient temperature must be 50°F (10°C) and rising through the day. Restrict application when overnight temperature drops below 40°F (4.4°C). Cooler temperatures will negatively impact the properties of the system. Contact your WeatherWeld Representative for proper cold weather applications.

HOT WEATHER RESTRICTIONS
Do not attempt application if moisture or dew is present. Ambient temperature must be less than 110°F (43°C). Contact WeatherWeld Representative for proper hot weather application.

STORAGE
WeatherWeld on the job site should be stored in a shaded ventilated area under a tarp. Do not store in direct sunlight. Storage temperature must range from 60-80°F (15°C to 26°C). Indoor ventilated storage is recommended when ambient temperature is below 60°F (15°C) or above 80°F (26°C).

WARRANTY
40-year Warranty: a written leak free guarantee that covers against roof leaks for 40 years.

Owner responsibilities include ensuring roof drains stay clean and facilitate WeatherWeld roof inspections every 10 years.

**Reflective coatings are not included in WeatherWeld Leak Free Guarantee. Optional reflective coating warranties are available. Contact WeatherWeld Representative.*

For specifics, see the 40-year Warranty sample and Warranty Guide.

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WEATHERWELD

ROOF REINFORCEMENT SYSTEMS R-16-30-M-A 40 YEAR WARRANTY

DESCRIPTION

WeatherWeld is a fully seamless reinforced roof system designed to encapsulate existing metal roof systems such as corrugated and standing seam. WeatherWeld is made to be the strongest roof system on the market. WeatherWeld created a roofing system utilizing the longest lasting and strongest materials in the world combined through a patented 3D printer that creates a seamless reinforced membrane that is super strong, durable, and designed to last for generations.

The encapsulation system combines ceramic asphalt emulsion with intertwined fiberglass, which creates a seamless membrane that is virtually impenetrable.

MATERIALS

The materials used in the WeatherWeld Seamless Roof Encapsulation System include:

1. Emulsion	WeatherWeld Asphalt Emulsion
2. Fiberglass	WeatherWeld Fiberglass Gun Roving
3. Polyester Ply	Polyester Fabric Reinforcement
4. Base Coat	WeatherWeld Base Coat
5. Top Coat	WeatherWeld Title 24 Top Coat
6. Aluminum Coating	WeatherWeld Aluminum Coating
7. Self-Adhering Membrane	Henry Ruftac 600
8. Fiber Cant Strip	Compressed Fiber Cant Strip
9. Cant Strip Adhesive	2 Part Low Rise Foam Adhesive
10. Asphalt primer	Water Based Asphalt Primer

PHYSICAL PROPERTIES

- System Weight: 1.60 lb. per 100 sq. ft (0.72 kg) dry.

APPLICATION EQUIPMENT

1. Graco 1017 Roof Pump with 500' 1" SAE hydraulic hose
2. Towable Air Compressor with 500' ½" air hose
3. Emulsion tanker (delivered to jobsite)
4. WeatherWeld 3D Roof Printer (handheld application machine rented from WeatherWeld on a per job basis)
5. Pressure washer
6. Water hose and water source (enough length to wrap around building)
7. Wet Mil Gauge
8. General PPE
9. General roofing tools

INSTALLATION

Installation of the WeatherWeld system is accomplished in 6 steps:

1. Wash existing roof until clean.
2. Prepare existing metal roof, seams, fasteners, walls, roof flashings, drains, and penetrations.
3. Install WeatherWeld (spray application).
4. Install reflective coating system (optional).
5. Install flashings, and additional items listed below.
6. Contact WeatherWeld Representative for final inspection.

Prior to installation, ensure that adhesion testing was conducted in accordance with WeatherWeld adhesion testing procedures to verify a minimum adhesion strength of four (4) pounds per linear inch (pli) for WeatherWeld to the applicable substrates. When calculating material requirements for a particular project, consideration must be given to applicator variance and surface texture.

REPAIR

1. All necessary metal seam and flashing repairs must be done according to good construction practices, including the removal of all wet insulation and defective materials as identified through a moisture detection survey, such as an infrared scan and replacement with like materials.
2. All seams must be checked, and any loose or damaged seams or fasteners must be resealed/repaired.
3. Panels rusted through or not structurally sound must be replaced with new panels.
4. Repair blisters, holes, cuts, cracks, splits, or other surface defects with WeatherWeld materials.

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PREPARATION

1. Confirm local water run-off ordinances and restrictions prior to cleaning roof.
2. Carefully power wash all roof surfaces with clean water to remove debris, rust, scale, dirt, dust, chalking, peeling, or flaking coatings, etc. Do not force water into the roof system or damage roof surfaces. Rinse at least twice to be sure all cleaning agents or contaminants are completely removed to prevent adhesion issues.
3. If the roof surface becomes contaminated with dirt, dust, or other particles at any time during the application of the WeatherWeld system, cleaning measures must be taken to restore the surface to a suitable condition.
4. Ensure roof is dry prior to application.

STANDING SEAM METAL PANELS (taller than 2.5")

1. Install cant-strip adhered in adhesive on each side of standing seam joint.
2. Ensure gap between cant strip and sheet metal joint is less than 1/8".
3. Taper cant strip at a 45 degree angle, 12" from perimeter edges.

FLASHING

NOTE: All flashings must have 500 mills DFT (dry film thickness) of WeatherWeld Composite installed extending 24" in each direction prior to completion of the project.

PERIMETER EDGE ROOF FLASHING SYSTEM: Replace perimeter edge flashing system with new.

Ensure existing roof flashings, including sheet metal flashings, base-flashings, and drains or gutters, are in serviceable condition. If items are installed incorrectly, items should be replaced with new.

The following items are required to be in watertight condition for a WeatherWeld warranty to be issued for the project:

1. Drains and Scuppers
2. Sheetmetal Coping
3. Counter-Flashings
4. Perimeter and Edge flashings
5. Equipment Platforms and Sheetmetal Pans
6. Expansion Joints
7. Sheetmetal Ducts and Seals
8. Electrical Enclosures and Conduits
9. Transition Flashings
10. Any other item that could affect the watertight integrity of the WeatherWeld Seamless Roof System

WEATHERWELD SEAMLESS ROOFING APPLICATION

Apply one layer of the composite roofing at the following ratio:

1. Asphalt Emulsion (undiluted): 30 gal. per 100 square feet (12.2 L/m2).
2. Fiberglass Reinforcement: 16 lb. per 100 square feet (0.78 Kg/m2).

- No water or other material may be added to the emulsion to thin or extend pot life.
- Fiberglass must be disbursed from the applicator in varying intertwined lengths, up to 24 inches (610mm).
- Thoroughly mix fiberglass and emulsion prior to application on roof surface.
- Any loose strands must be brushed by hand, removed or filled-in with emulsion to create a solid surface.
- Upon completion, no area may be less than 250 mil dry film thickness (DFT).
- Install additional material at all roof flashings, 500 mils (DFT) of WeatherWeld composite installed, extending 24" in each direction prior to completion of the project.
- Areas such as base flashings and penetrations, where application exceeds 500 mils wet, must be brushed by hand to prevent surface crazing.

REFLECTIVE COATING INSTALLATION*

Prior to reflective coating application, wash the roof surface with water. Do not commence application until the system has thoroughly dried, as registered by a reading of zero on a calibrated moisture meter.

1. Acrylic Title 24 Coating Application: Apply Title 24 roof coating at a minimum of 1 1/2 gal. per 100 square feet (0.6 L/m2). in each of two passes to total 3 gallons per 100 square feet (1.2 L/m2). Back rolling is recommended to ensure even coverage throughout.
2. Energy Star rated Aluminum Coating Application: Apply Aluminum coating at a minimum of 2 gal. per 100 square feet (1.0 L/m2).

**Reflective coating system is optional. Refer to local codes for Title 24 or Energy Star requirements.*

ROOF ACCESSORIES (INSTALL AFTER REFLECTIVE COATING SYSTEM)
Walkway Pads (optional) or Non-Slip Walking Surface
Polymer Pipe Supports
Storm Collars on Pipes
Coping Caps and Flashings
Access Hatches and Ladders
Drain Rings and Screens

INSPECTION
Inspect entire roof area and touch-up deficient areas with WeatherWeld or reflective coating as necessary to ensure complete and uniform coverage. Special attention should be given to critical areas of roof, including roof penetrations, transitions, existing membrane seams, flashings, and drains.

LIMITATIONS
These are general guidelines for application of the WeatherWeld Seamless Roof System. The material requirements may vary depending on the specific job requirements. If unusual conditions exist, contact your local WeatherWeld Representative.

WeatherWeld Seamless Metal Roof Systems must be applied to structurally sound substrates and properly prepared surfaces. All surfaces must be clean and dry before application of coatings. WeatherWeld Seamless Roof Systems must not be applied over wet insulation or roofing materials. Failure of the substrate does not constitute failure of the WeatherWeld coating or system. WeatherWeld Seamless Roof Systems are designed for use on roofs with positive drainage.

1. Product application must not be done when rain or other conditions such as fog or heavy dew are possible within a 48-hour period.
2. Roof surface must be at least 6 Fahrenheit degrees or 3 Celsius degrees above the dew point and rising. Surfaces must always be clean before application of product. Care must be taken to ensure that debris accumulation after original cleaning does not interfere with any stage of the applications. If either condition occurs, then additional cleaning may be required.
3. Drying time is affected by numerous factors, including temperature, direct sunlight, relative humidity, air movement, thickness, etc. Higher temperature and/or humidity will result in faster cure times. Lower temperature and/or humidity may extend cure times.
4. Do not thin or add water to materials to extend pot life.
5. Proper thickness is essential to performance. The minimum coverage rate of 250 mil DFT (dry film thickness) 1/4" (.250) must be achieved throughout the entire Seamless Roof System assembly and must be verified using a wet mil gauge during application. Multiple coats may be necessary depending on weather and time of year.
6. Deviations from these application guidelines and specific material requirements may seriously affect the roofing system performance and are strictly prohibited.
7. Applicator must comply with all applicable local, state, and federal regulations if lead-based paint or other hazardous materials are encountered.
8. Roofing is hazardous work and coatings are very slippery when wet. Comply with fall protection rules and regulations.
9. Proper PPE including, but not limited to: Safety Glasses, Gloves, N95 Mask, Hardhat, Footwear, and Protective Clothing must be always worn.

COLD WEATHER RESTRICTIONS
Do not attempt application if ice, snow, moisture, or dew is present. Ambient temperature must be 50°F (10°C) and rising through the day. Restrict application when overnight temperature drops below 40°F (4.4°C). Cooler temperatures will negatively impact the properties of the system. Contact your WeatherWeld Representative for proper cold weather applications.

HOT WEATHER RESTRICTIONS
Do not attempt application if moisture or dew is present. Ambient temperature must be less than 110°F (43°C). Contact WeatherWeld Representative for proper hot weather application.

STORAGE
WeatherWeld on the job site should be stored in a shaded ventilated area under a tarp. Do not store in direct sunlight. Storage temperature must range from 60-80°F (15°C to 26°C). Indoor ventilated storage is recommended when ambient temperature is below 60°F (15°C) or above 80°F (26°C).

WARRANTY
40-year Warranty: a written leak free guarantee that covers against roof leaks for 40 years.

Owner responsibilities include ensuring roof drains stay clean and facilitate roof WeatherWeld inspections every 10 years.

**Reflective coatings are not included in WeatherWeld Leak Free Guarantee. Optional reflective coating warranties are available. Contact WeatherWeld Representative.*

For specifics, see the 40-year Warranty sample and Warranty Guide.

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ROOF REINFORCEMENT SYSTEMS R-1P-16-45-A 40 YEAR WARRANTY

DESCRIPTION
WeatherWeld is a fully seamless reinforced roof system that is designed to reinforce existing roof systems such as gravel surfaced built up roofs. WeatherWeld is made to be the strongest roof system on the market. WeatherWeld created a roofing system utilizing the longest lasting and strongest materials in the world combined through a patented 3D printer that creates a seamless reinforced membrane that is super strong, durable, and designed to last for generations.
The seamless roof system combines ceramic asphalt emulsion with intertwined fiberglass, which creates a seamless membrane that is virtually impenetrable.

MATERIALS
The materials used in the WeatherWeld gravel roof restoration system include:

1. Emulsion	WeatherWeld Asphalt Emulsion
2. Fiberglass	WeatherWeld Fiberglass Gun Roving
3. Polyester Ply	WeatherWeld Polyester Ply
4. Base Coat	WeatherWeld Base Coat
5. Top Coat	WeatherWeld Title 24 Top Coat
6. Aluminum Coating	WeatherWeld Aluminum Coating
7. Self-Adhering Membrane	Henry Ruftac 600
8. Asphalt primer	Water Based Asphalt Primer

PHYSICAL PROPERTIES
- System Weight: 2.23. per 100 sq. ft (1.01 kg) dry.

APPLICATION EQUIPMENT
1. Graco 1017 Roof Pump with 500' 1" SAE hydraulic hose
2. Towable Air Compressor with 500' ½" air hose
3. Emulsion tanker (delivered to jobsite)
4. WeatherWeld 3D Roof Printer (handheld application machine rented from WeatherWeld on a per job basis)
5. Pressure washer
6. Water hose and water source (enough length to wrap around building)
7. Wet Mil Gauge
8. General PPE
9. General roofing tools

INSTALLATION
Installation of the WeatherWeld system is accomplished in 7 steps:
1. Vacuum loose gravel.
2. Prepare existing Gravel Surfaced Built Up roof, seams, fasteners, walls, roof flashings, drains, and penetrations.
3. Install Polyester Leveling System
4. Install WeatherWeld (spray application).
5. Install reflective coating system (optional).
6. Install flashings, and additional items listed below.
7. Contact WeatherWeld Representative for final inspection.

Prior to installation, ensure that adhesion testing was conducted in accordance with WeatherWeld adhesion testing procedures to verify a minimum adhesion strength of four (4) pounds per linear inch (pli) for WeatherWeld to the applicable substrates. When calculating material requirements for a particular project, consideration must be given to applicator variance and surface texture.

REPAIR
1. All necessary metal seam and flashing repairs must be done according to good construction practices, including the removal of all wet insulation and defective materials as identified through a moisture detection survey, such as an infrared scan and replacement with like materials.
2. All seams must be checked, and any loose or damaged seams or fasteners must be resealed/repaired.
3. Panels rusted through or not structurally sound must be replaced with new panels.
4. Repair blisters, holes, cuts, cracks, splits, or other surface defects with WeatherWeld materials.

PREPARATION
1. Confirm local water run-off ordinances and restrictions prior to cleaning roof.
2. Vacuum all loose gravel.
3. Carefully power wash all roof surfaces with clean water to remove debris, rust, scale, dirt, dust, chalking, peeling, or flaking coatings, etc. Do not force water into the roof system or damage roof surfaces. Rinse at least twice to be sure all cleaning agents or contaminants are completely removed to prevent adhesion issues.
4. If the roof surface becomes contaminated with dirt, dust, or other particles at any time during the application of the WeatherWeld system, cleaning measures must be taken to restore the surface to a suitable condition.
5. Ensure roof is dry prior to application.

FLASHING
NOTE: All flashings must have 500 mills DFT (dry film thickness) of WeatherWeld Composite installed extending 24" in each direction prior to completion of the project.

PERIMETER EDGE ROOF FLASHING SYSTEM: Replace perimeter edge flashing system with new.

Ensure existing roof flashings, including sheet metal flashings, base-flashings, and drains or gutters, are in serviceable condition. If items are installed incorrectly, items should be replaced with new.
The following items are required to be in watertight condition for a WeatherWeld warranty to be issued for the project:
1. Drains and Scuppers
2. Sheetmetal Coping
3. Counter-Flashings
4. Perimeter and Edge flashings
5. Equipment Platforms and Sheetmetal Pans
6. Expansion Joints
7. Sheetmetal Ducts and Seals
8. Electrical Enclosures and Conduits
9. Transition Flashings
10. Any other item that could affect the watertight integrity of the WeatherWeld Seamless Roof System

POLYESTER LEVELING SYSTEM APPLICATION
1. Solidly embed polyester ply in 15 gal. of emulsion per 100 sq. ft. (6.1 L/m²).
2. Polyester must be brought to the top of all base flashings.
3. Allow polyester to dry to accept foot traffic prior to application of the WeatherWeld composite.

WEATHERWELD SEAMLESS ROOFING APPLICATION
Apply one layer of the composite roofing at the following ratio:
1. Asphalt Emulsion (undiluted): 30 gal. per 100 square feet (12.2 L/m2).
2. Fiberglass Reinforcement: 16 lb. per 100 square feet (0.78 Kg/m2).

- No water or other material may be added to the emulsion to thin or extend pot life.
- Fiberglass must be disbursed from the applicator in varying intertwined lengths, up to 24 inches (610mm).
- Thoroughly mix fiberglass and emulsion prior to application on roof surface.
- Any loose strands must be brushed by hand, removed or filled-in with emulsion to create a solid surface.
- Upon completion, no area may be less than 250 mil dry film thickness (DFT).
- Install additional material at all roof flashings, 500 mils (DFT) of WeatherWeld composite installed, extending 24" in each direction prior to completion of the project.
- Areas such as base flashings and penetrations, where application exceeds 500 mils wet, must be brushed by hand to prevent surface crazing.

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REFLECTIVE COATING INSTALLATION*
Prior to reflective coating application, wash the roof surface with water. Do not commence application until the system has thoroughly dried, as registered by a reading of zero on a calibrated moisture meter.

1. Acrylic Title 24 Coating Application: Apply Title 24 roof coating at a minimum of 1 1/2 gal. per 100 square feet (0.6 L/m2). in each of two passes to total 3 gallons per 100 square feet (1.2 L/m2). Back rolling is recommended to ensure even coverage throughout.
2. Energy Star rated Aluminum Coating Application: Apply Aluminum coating at a minimum of 2 gal. per 100 square feet (1.0 L/m2).

**Reflective coating system is optional. Refer to local codes for Title 24 or Energy Star requirements.*

ROOF ACCESSORIES (INSTALL AFTER REFLECTIVE COATING SYSTEM)
Walkway Pads (optional) or Non-Slip Walking Surface
Polymer Pipe Supports
Storm Collars on Pipes
Coping Caps and Flashings
Access Hatches and Ladders
Drain Rings and Screens

INSPECTION
Inspect entire roof area and touch-up deficient areas with WeatherWeld or reflective coating as necessary to ensure complete and uniform coverage. Special attention should be given to critical areas of roof, including roof penetrations, transitions, existing membrane seams, flashings, and drains.

LIMITATIONS
These are general guidelines for application of the WeatherWeld Seamless Roof System. The material requirements may vary depending on the specific job requirements. If unusual conditions exist, contact your local WeatherWeld Representative.

WeatherWeld Seamless Roof Systems must be applied to structurally sound substrates and properly prepared surfaces. All surfaces must be clean and dry before application of coatings. WeatherWeld Seamless Roof Systems must not be applied over wet insulation or roofing materials. Failure of the substrate does not constitute failure of the WeatherWeld coating or system. WeatherWeld Seamless Roof Systems are designed for use on roofs with positive drainage.

1. Product application must not be done when rain or other conditions such as fog or heavy dew are possible within a 48-hour period.

2. Roof surface must be at least 6 Fahrenheit degrees or 3 Celsius degrees above the dew point and rising. Surfaces must always be clean before application of product. Care must be taken to ensure that debris accumulation after original cleaning does not interfere with any stage of the applications. If either condition occurs, then additional cleaning may be required.

3. Drying time is affected by numerous factors, including temperature, direct sunlight, relative humidity, air movement, thickness, etc. Higher temperature and/or humidity will result in faster cure times. Lower temperature and/or humidity may extend cure times.

4. Do not thin or add water to materials to extend pot life.

5. Proper thickness is essential to performance. The minimum coverage rate of 250 mil DFT (dry film thickness) 1/4" (.250) must be achieved throughout the entire Seamless Roof System assembly and must be verified using a wet mil gauge during application. Multiple coats may be necessary depending on weather and time of year.

6. Deviations from these application guidelines and specific material requirements may seriously affect the roofing system performance and are strictly prohibited.

7. Applicator must comply with all applicable local, state, and federal regulations if lead-based paint or other hazardous materials are encountered.
8. Roofing is hazardous work and coatings are very slippery when wet. Comply with fall protection rules and regulations.

9. Proper PPE including, but not limited to: Safety Glasses, Gloves, N95 Mask, Hardhat, Footwear, and Protective Clothing must be always worn.

COLD WEATHER RESTRICTIONS
Do not attempt application if ice, snow, moisture, or dew is present. Ambient temperature must be 50°F (10°C) and rising through the day. Restrict application when overnight temperature drops below 40°F (4.4°C). Cooler temperatures will negatively impact the properties of the system. Contact your WeatherWeld Representative for proper cold weather applications.

HOT WEATHER RESTRICTIONS
Do not attempt application if moisture or dew is present. Ambient temperature must be less than 110°F (43°C). Contact WeatherWeld Representative for proper hot weather application.

STORAGE
WeatherWeld on the job site should be stored in a shaded ventilated area under a tarp. Do not store in direct sunlight. Storage temperature must range from 60-80°F (15°C to 26°C). Indoor ventilated storage is recommended when ambient temperature is below 60°F (15°C) or above 80°F (26°C).

WARRANTY
40-year Warranty: a written leak free guarantee that covers against roof leaks for 40 years.

Owner responsibilities include ensuring roof drains stay clean and facilitate roof WeatherWeld inspections every 10 years.

**Reflective coatings are not included in WeatherWeld Leak Free Guarantee. Optional reflective coating warranties are available. Contact WeatherWeld Representative.*

For specifics, see the 40-year Warranty sample and Warranty Guide.

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DESCRIPTION

WeatherWeld is a fully seamless new roof system that is designed for installation as a new roof system installed over a non nailable deck or substrate (such as concrete or insulation). WeatherWeld is made to be the strongest roof system on the market. WeatherWeld created a roofing system utilizing the longest lasting and strongest materials in the world combined through a patented 3D printer that creates a seamless reinforced membrane that is super strong, durable, and designed to last for generations.
The seamless roof system combines ceramic asphalt emulsion with intertwined fiberglass, which creates a seamless membrane that is virtually impenetrable.

MATERIALS

The materials used in the WeatherWeld new roof system application include:

1. Emulsion	WeatherWeld Asphalt Emulsion
2. Fiberglass	WeatherWeld Fiberglass Gun Roving
3. Polyester Ply	Polyester Fabric Reinforcement
4. Insulation	PolyIso Insulation
5. Insulation Facer/Substrate	DensDeck
6. Tapered Insulation	PolyIso (if required)
7. Base Sheet	#75 Mineral-Surfaced Cap Sheet Inverted
8. Base Sheet Fastener	Base Sheet Adhesive/Fastener – FM I-90
9. Base Coat	WeatherWeld Base Coat
10. Top Coat	WeatherWeld Title 24 Top Coat
11. Aluminum Coating	WeatherWeld Aluminum Coating
12. Self-Adhering Membrane	Henry Ruftac 600
13. Asphalt primer	Water Based Asphalt Primer

PHYSICAL PROPERTIES

- System Weight: 2.25 lb. per 100 sq. ft (1.02 kg) dry.

APPLICATION EQUIPMENT

1. Graco 1017 Roof Pump with 500' 1" SAE hydraulic hose
2. Towable Air Compressor with 500' ½" air hose
3. Emulsion tanker (delivered to jobsite)
4. WeatherWeld 3D Roof Printer (handheld application machine rented from WeatherWeld on a per job basis)
5. Pressure washer
6. Water hose and water source (enough length to wrap around building)
7. Wet Mil Gauge
8. General PPE
9. General roofing tools

INSTALLATION

Installation of the WeatherWeld system is accomplished in 7 steps:

1. Install Insulation.
2. Install Base Sheet.
3. Prepare existing seams, fasteners, walls, roof flashings, drains, and penetrations.
4. Install WeatherWeld (spray application).
5. Install reflective coating system (optional).
6. Install flashings, and additional items listed below.
7. Contact WeatherWeld Representative for final inspection.

Prior to installation, ensure that adhesion testing was conducted in accordance with WeatherWeld adhesion testing procedures to verify a minimum adhesion strength of four (4) pounds per linear inch (pli) for WeatherWeld to the applicable substrates. When calculating material requirements for a particular project, consideration must be given to applicator variance and surface texture.

PREPARATION

1. Confirm local water run-off ordinances and restrictions prior to cleaning roof.
2. Install Base Sheet
3. If the roof surface becomes contaminated with dirt, dust, or other particles at any time during the application of the WeatherWeld system, cleaning measures must be taken to restore the surface to a suitable condition.
4. Ensure roof is dry prior to application.

FLASHING

NOTE: All flashings must have 500 mils DFT (dry film thickness) of WeatherWeld Composite installed extending 24" in each direction prior to completion of the project.

The following items are required to be in watertight condition for a WeatherWeld warranty to be issued for the project.

1. Drains and Scuppers
2. Sheetmetal Coping
3. Counter-Flashings
4. Perimeter and Edge flashings
5. Equipment Platforms and Sheetmetal Pans
6. Expansion Joints
7. Sheetmetal Ducts and Seals
8. Electrical Enclosures and Conduits
9. Transition Flashings
10. Any other item that could affect the watertight integrity of the WeatherWeld Seamless Roof System

INSULATION SYSTEM INSTALLATION

Refer to insulation manufactures installation guidelines.

1. Insulation boards: install insulation boards per manufactures installation standards.
2. Tapered Insulation: if specified, adhere to insulation boards.
3. Substrate Board: Install minimum ¼" fiberglass faced gypsum board adhered in adhesive.

BASE SHEET INSTALLATION

1. Install mineral-surfaced cap sheet inverted, lapping 2" on center and 4" at end laps using approved fasteners. The fastening pattern shall meet, at minimum, FM I-90 requirements.

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