

PRODUCT DESCRIPTION

BASIC USE ProGUARD® DP is intended to be installed over sheathing and waterproofing over steel or wood studs or over concrete masonry units or poured concrete and waterproofing. It is used to provide an insulated concrete faced substrate for the application of adhered masonry veneers, stucco, and synthetic stucco while incorporating a drainage plane to allow moisture to drain down the assembly.

COMPOSITION AND MATERIAL ProGUARD® DP panels are constructed with Expanded Polystyrene (EPS) insulation, or Extruded Polystyrene (XPS) insulation cut with drainage grooves, or Mineral Wool Insulation and laminated directly to 1/4" thick concrete board panels containing cement and aggregates.

ProGUARD® DP Insulated Concrete Board Panel (EPS Foam Insulation with SINGLE DRAINAGE PLANE)

PROGUARD® DP SIZE AND THICKNESS	INSULATION THICKNESS	WEIGHT PER PIECE (LBS.)	R-VALUE (MOST TYPICAL) PER ASTM C-578 (4.35/IN) @75°F	R-VALUE PER ASTM C-578 (4.76/IN) @40°F	R-VALUE PER ASTM C-578 (5.00/IN) @25°F
3'-0" x 8'-0" x 1-1/4" DP-1	1"	52	2.72	2.98	3.13
3'-0" x 8'-0" x 1-1/2" DP-1	1-1/4"	53	3.80	4.17	4.38
3'-0" x 8'-0" x 1-3/4" DP-1	1-1/2"	54	4.89	5.36	5.63
3'-0" x 8'-0" x 2" DP-1	1-3/4"	54	5.98	6.55	6.88
3'-0" x 8'-0" x 2-1/4" DP-1	2"	56	7.07	7.74	8.13
3'-0" x 8'-0" x 2-1/2" DP-1	2-1/4"	57	8.15	8.93	9.38
3'-0" x 8'-0" x 2-3/4" DP-1	2-1/2"	58	9.24	10.12	10.63
3'-0" x 8'-0" x 3" DP-1	2-3/4"	59	10.33	11.31	11.88
3'-0" x 8'-0" x 3-1/4" DP-1	3"	60	11.41	12.50	13.13
3'-0" x 8'-0" x 3-1/2" DP-1	3-1/4"	61	12.50	13.69	14.38
3'-0" x 8'-0" x 3-3/4" DP-1	3-1/2"	62	13.59	14.88	15.63
3'-0" x 8'-0" x 4-1/4" DP-1	4"	64	15.76	17.26	18.13
3'-0" x 8'-0" x 5-1/4" DP-1	5"	70	20.11	22.02	23.13
3'-0" x 8'-0" x 6-1/4" DP-1	6"	72	24.46	26.79	28.13

R-Values are net of drainage grooves on one side (foam thickness less 3/8")

ProGUARD® DP Insulated Concrete Board Panel (XPS Foam Insulation with SINGLE DRAINAGE PLANE)

PROGUARD® DP SIZE AND THICKNESS	INSULATION THICKNESS	WEIGHT PER PIECE (LBS.)	R-VALUE (5.00/IN) @75°F
3'-0" x 8'-0" x 1-3/4" DP-1	1-1/2"	54	5.63
3'-0" x 8'-0" x 2-1/4" DP-1	2"	56	8.13
3'-0" x 8'-0" x 2-3/4" DP-1	2-1/2"	58	10.63
3'-0" x 8'-0" x 3-1/4" DP-1	3"	60	13.13
3'-0" x 8'-0" x 4-1/4" DP-1	4"	64	18.13

R-Values are net of drainage grooves on one side (foam thickness less 3/8")

ProGUARD®DP Insulated Concrete Board Panel (EPS Foam Insulation with DOUBLE DRAINAGE PLANE)

PROGUARD®DP SIZE AND THICKNESS	INSULATION THICKNESS	WEIGHT PER PIECE (LBS.)	R-VALUE (MOST TYPICAL) PER ASTM C-578 (4.35/IN) @75°F	R-VALUE PER ASTM C-578 (4.76/IN) @40°F	R-VALUE PER ASTM C-578 (5.00/IN) @25°F
3'-0" x 8'-0" x 1-3/4" DP-2	1-1/2"	54	3.26	3.57	3.75
3'-0" x 8'-0" x 2" DP-2	1-3/4"	54	4.35	4.76	5.00
3'-0" x 8'-0" x 2-1/4" DP-2	2"	56	5.43	5.95	6.25
3'-0" x 8'-0" x 2-1/2" DP-2	2-1/4"	57	6.52	7.14	7.50
3'-0" x 8'-0" x 2-3/4" DP-2	2-1/2"	58	7.61	8.33	8.75
3'-0" x 8'-0" x 3" DP-2	2-3/4"	59	8.70	9.52	10.00
3'-0" x 8'-0" x 3-1/4" DP-2	3"	60	9.78	10.71	11.25
3'-0" x 8'-0" x 3-1/2" DP-2	3-1/4"	61	10.87	11.90	12.50
3'-0" x 8'-0" x 3-3/4" DP-2	3-1/2"	62	11.96	13.10	13.75
3'-0" x 8'-0" x 4-1/4" DP-2	4"	64	14.13	15.48	16.25
3'-0" x 8'-0" x 5-1/4" DP-2	5"	70	18.48	20.24	21.25
3'-0" x 8'-0" x 6-1/4" DP-2	6"	72	22.83	25.00	26.25

R-Values are net of drainage grooves on one side (foam thickness less 3/8")

**ProGUARD®DP Insulated Concrete Board Panel
(XPS Foam Insulation with DOUBLE DRAINAGE PLANE)**

PROGUARD®DP SIZE AND THICKNESS	INSULATION THICKNESS	WEIGHT PER PIECE (LBS.)	R-VALUE (5.00/IN) @75°F
3'-0" x 8'-0" x 1-3/4" DP-2	1-1/2"	54	3.75
3'-0" x 8'-0" x 2-1/4" DP-2	2"	56	6.25
3'-0" x 8'-0" x 2-3/4" DP-2	2-1/2"	58	8.75
3'-0" x 8'-0" x 3-1/4" DP-2	3"	60	11.25
3'-0" x 8'-0" x 4-1/4" DP-2	4"	64	16.25

R-Values are net of drainage grooves on two sides (foam thickness less 3/4")

**ProGUARD®DP Insulated Concrete Board Panel
Mineral Wool Insulation (6 lbs. density) with NO DRAINAGE PLANES
(Drainage planes are not required as mineral wool is free draining)**

PROGUARD®DP SIZE AND THICKNESS	INSULATION THICKNESS	WEIGHT PER PIECE (LBS.)	R-VALUE (4.30/IN) @75°F
3'-0" x 4'-0" x 1-1/4" DP-0	1"	26	4.30
3'-0" x 4'-0" x 1-3/4" DP-0	1-1/2"	27	6.45
3'-0" x 4'-0" x 2-1/4" DP-0	2"	28	8.60
3'-0" x 4'-0" x 2-3/4" DP-0	2-1/2"	29	10.75
3'-0" x 4'-0" x 3-1/4" DP-0	3"	30	12.90
3'-0" x 4'-0" x 3-3/4" DP-0	3-1/2"	31	15.05
3'-0" x 4'-0" x 4-1/4" DP-0	4"	32	17.20
3'-0" x 4'-0" x 5-1/4" DP-0	5"	35	21.50
3'-0" x 4'-0" x 6-1/4" DP-0 (Double Drainage Plane)	6"	36	25.80

SHAPES AND SIZES

TECHNICAL DATA

APPLICABLE STANDARDS

ASTM C518	ASTM C578	ASTM D1037
ASTM D1621	ASTM D2842	ASTM E84
ASTM C272	ASTM D3273	NFPA 285
ASTM E96	ASTM D2394	
ASTM D696	ASTM C947	

PHYSICAL/CHEMICAL PROPERTIES

ProGUARD®DP Concrete Insulated Panels exhibit the properties and characteristics indicated in the charts below. When properly installed, prolonged exposure of the Util-A-Crete® concrete board surface will not be significantly damaged by exposure to ultraviolet radiation. All joints and exposed foam edges should be sealed prior to any extended exposure.

Util-A-Crete® Concrete Board Facing

PERFORMANCE PROPERTY	TEST METHOD	VALUE
Compressive Strength - psi	ASTM D2394	≥2600
Flexural Strength - psi	ASTM C947	≥1500
Linear Variations with change in Moisture to Air dry (50% R.H., 73°) Width Length	ASTM D1037	0.02% 0.02%
Surface Burning Characteristics Flame Spread Smoke Developed	ASTM E84	5 0
Weight per Square Foot (lbs)		2
Fastener Pull Through (lbs)	ASTM D1037	≥195
Bond Strength (lbs) (Ceramic Tile Wet & Dry)	ASTM A118	≥50

Expanded Polystyrene Insulation (EPS) * Value with Util-A-Crete concrete skin adhered

PERFORMANCE PROPERTY	TEST METHOD	VALUE
Nominal Density (lbs/cf)	ASTM C303	2.0
Compressive Strength (psi)	ASTM D1621	25
R-Value per Inch of Material (75 degree mean temp)	ASTM C518	4.35
Water Absorption (% by volume Max)	ASTM C272	<2.0
Water Vapor Permeance (perm) 2"	ASTM E96	<0.6 *
Flame Spread	ASTM E84	<25
Smoke Developed	ASTM E84	<450

Dow Extruded Polystyrene Insulation (XPS) * Value with Util-A-Crete concrete skin adhered

PERFORMANCE PROPERTY	TEST METHOD	VALUE
Nominal Density (lbs/cf)	ASTM C303	1.55
Compressive Strength (psi)	ASTM D1621	25
R-Value per Inch of Material (75 degree mean temp)	ASTM C518	5
Water Absorption (% by volume Max)	ASTM C272	0.30
Water Vapor Permeance (perm) 2"	ASTM E96	<0.6 *
Flame Spread	ASTM E84	5
Smoke Developed	ASTM E84	165

Mineral Wool Insulation

PERFORMANCE PROPERTY	TEST METHOD	VALUE
Nominal Density (lbs/cf)	ASTM C303	6.0
R-Value per Inch of Material (75 degree mean temp)	ASTM C518	4.3
Water Absorption (% by volume Max)	ASTM 1104	0.03
Water Vapor Permeance (perm)	ASTM E96	50 (unfaced)
Flame Spread	ASTM E84	0
Smoke Developed	ASTM E84	0

INSTALLATION

DELIVERY ProGUARD®DP is delivered to site in protective packaging.

HANDLING Lift Skids with proper and sufficiently long slings or forks with protection to prevent damage to panels. Protect edges and corners.

STORAGE Store ProGUARD®DP Insulated Concrete Panels in a manner designed to prevent damage and staining and contamination. Stack panels on timber platforms at least 3" above grade. Cover stored skids if exposed to extreme weather conditions. Do not use de-icing compounds to remove ice from the ProGUARD®DP panel surfaces. Protect panels from abuse, damage and contamination prior to exterior wall finish application.

INSTALLATION ProGUARD®DP must be installed using approved materials and techniques for each specific installation. Refer to the ARRISCRAFT-CADD Library for applicable details. Construct with ProGUARD®DP Insulated Concrete Panels in accordance with all applicable codes and standards and any local requirements stipulated by the authorities having jurisdiction.

A suitably solid substrate should be provided to support the ProGUARD®DP panels. Suitable substrate options include steel stud, poured concrete, concrete masonry units (CMU), and wood stud. Installation on other substrates may be possible. Contact Technical Services for information on installation over specific substrates. The substrate shall be installed plumb and level. Steel studs should be 16-gauge minimum. Design substrate for a maximum allowable deflection of L/600 (L/720 preferred).

If using wood or steel studs then install exterior grade sheathing (glass-mat reinforced gypsum board or plywood) per manufacturer's recommendations with proper screw placement and attachment.

Apply a liberal coat of Laticrete Air & Water Barrier (Vapor Barrier Material) to the joints between the exterior grade sheathing boards and then embed the Laticrete Waterproofing/Anti-Fracture Fabric Tape into it. Once the tape is applied, apply another liberal coat of Laticrete Air & Water Barrier over the Fabric Tape and allow it all to cure per Laticrete's recommendations. Remember to pre-treat the fastener locations in the exterior grade sheathing with Laticrete Air & Water Barrier.

Alternatively, apply a liberal coat of ProGUARD®DP Water Armor Air and Water Barrier (Air Barrier Material) to the joints between the exterior grade sheathing boards and then embed the ProGUARD®DP Water Armor Flashing Tape into it. Once the tape is applied, apply another liberal coat of ProGUARD®DP Water Armor Air and Water Barrier over the flashing tape and allow it all to cure per T-Clear's recommendations. Remember to pre-treat fastener locations in the exterior grade sheathing with ProGUARD®DP Water Armor Air and Water Barrier.

Install 16-gauge steel flashing/panel support (ideally prefinished or with a G-90 coating) at the base of all walls, above wall openings, and at deflection

joints in the stud assembly. Attach the steel flashing at 16" O.C. back to the studs or solid substrate behind, using the same screws used to attach the ProGUARD®DP insulated concrete panels (shorter versions of the same screws). The steel flashing should extend 6" up the wall and the horizontal leg should project a minimum of 1/2" beyond the face of the ProGUARD®DP insulated concrete panel face (i.e. horizontal leg is based on the thickness of the ProGUARD®DP insulated concrete panels plus 1/2"). If the panels are resting on the foundation ledge or 16-gauge steel flashing/panel support is used then this would be a ProGUARD®DP "supported panel application" (i.e. base of ProGUARD®DP insulated concrete panels are supported on foundation ledge or footing or 16-gauge steel flashing/panel support). Install bent metal drip edge over flashing/panel support. Set in bead of silicone sealant.

16-gauge steel flashing/panel support does not have to be utilized. If not used then this would be a ProGUARD®DP "unsupported panel application". In this case, more screws with a tighter screw spacing may be required to fasten the ProGUARD®DP insulated concrete panels to the substrate. The engineer of record should provide this information by referring to NTA Report TRI9030116-28 for further information.

Apply two coats of Laticrete Air and Water Barrier (Vapor Barrier Material) over the entire surface of the sheathing. Follow manufacturer's instructions for proper application.

Alternatively if using ProGUARD®DP Water Armor Air and Water Barrier (Air Barrier Material) to seal and treat the joints in the sheathing then apply two coats ProGUARD®DP Water Armor Air and Water Barrier over the entire surface of the sheathing. Follow manufacturer's instructions for proper application.

If installing ProGUARD®DP over concrete masonry units (CMU) or poured concrete waterproof the CMU or concrete with either the Laticrete Air and Water Barrier (Vapor Barrier Material) or the ProGUARD®DP Water Armor Air and water Barrier (Air Barrier Material). Apply two coats and follow the manufacturers instructions for proper application.

Install 1/8" thick hard plastic shims at the base of the wall on top of the 16-gauge flashing or flashing over the foundation ledge every 16" to support the bottom of the panels and create a small gap for moisture to escape the assembly from the drainage planes. Tack the shims in place with a dab of waterproofing.

Install first ProGUARD®DP insulated concrete panels. The bottom ship-lapped edge of the panel should be cut so that the concrete board and insulation are flush at the base of the wall. Set the bottom of the panel down on the steel flashing support and shims. Ensure that the vertical panel joints fall on a stud. Panels may have to be cut to length to accomplish this. Always

set the 8'-0" dimension in the horizontal dimension on the wall (3'-0" is always the vertical dimension).

The Engineer of record should select ProGUARD®DP screws and screw spacing using NTA Report TRI9030116-28 and will be dependent on supported or unsupported panel applications, weight of the thin adhered masonry veneer or stucco application, insulation thickness, wall height, wind pressure, and wind speed. When fastening the ProGUARD®DP panels, the screw heads should not break the outside skin of the concrete board.

Please call Technical Services if there are any questions about the screws or screw spacing. Only use approved ProGUARD®DP screws and do not substitute with any other screw, as this could void the ProGUARD warranty.

Install second ProGUARD®DP insulated concrete panel adjacent to the first panel (following similar procedures to the first). Slip the foam insulation edge of the second panel behind the ship lapped edge of the concrete board of the first panel. Screw the ship lapped edge of the first panel back to the studs. Continue in the same fashion along base of wall until all panels are installed.

Install the next row of ProGUARD®DP panels above offsetting the vertical panel joints in increments of 16" O.C. (i.e. 16", 32", 48" etc...). ProGUARD®DP insulated concrete panels cannot be oriented vertically (i.e. the 8'-0" length of the panel must always be in the horizontal direction for the drainage grooves to align).

To promote drainage of the assembly, the panels must be installed with the insulation grooves aligned. Offsetting the vertical panel joints in increments of 16" O.C. (i.e. 16", 32", 48" etc.) will help to align the drainage grooves, however using a 3/8" diameter wood dowel slid into the drainage grooves to align the joints may be required. Remove the wood dowel once the next panel has been tacked into place and repeat as required.

At the corners of the building, panels will need to be cut to length. We suggest mitering the back of the panels at 45 degrees for 90 degree/right angle corners for example. This will ensure the corner is covered with cement board and no insulation edges will be exposed. The panels can be cut with a circular saw and if only cutting the foam a hot wire saw can be used using approved methods. Contact Technical Services for further information.

Once all ProGUARD®DP panels are installed, treat all joints between panels with a 4" wide alkali-resistant mesh tape. Apply tape across all joints (2" on either side of joint), pressing firmly to ensure adhesion to substrate. Spread a thin coat of Laticrete Hi-Bond Masonry Veneer Mortar over the alkali resistant mesh tape. Allow Laticrete Hi-Bond Masonry Veneer Mortar to fully cure. The adhered veneer materials can now be applied.

AVAILABILITY AND COST

AVAILABILITY ProGUARD®DP Insulated Concrete Board Panels are available worldwide. Delivery times for orders will vary based on the complexity of the order. T-Clear and General Shale cannot be responsible for delays due to fire, acts of God or any other cause beyond its control or which could not be reasonably foreseen. Contact General Shale for a list of dealers in your area.

COST Quoted on a project basis for job-specific manufacturing to project requirements.

WARRANTY

T-Clear warrants ProGUARD®DP for a period of 15 years and free of material defects provided the products have been erected and used according to the accepted standards, within the guidelines of local building codes and as recommended by the manufacturer. Complete Warranty information is outlined on the ProGUARD®DP standard form of Product Warranty.

MAINTENANCE

Not applicable. This will be a function of the finish system applied to the surface of the ProGUARD®DP panels.

TECHNICAL SERVICES

General Shale offers consultation services to assist with the preparation of details, specifications, installation, and pricing. Enquiries are attended to promptly and without obligation.

General Shale also makes available samples for color and finish, coursing charts, and copies of test reports upon request.

