

Metazeal

Metazeal is a UV stable, pre-formed, closed-cell, low-density polyethylene foam joint seal. The material is typically used as an expansion joint seal or as a gasket material in bridge, commercial building, parking, water treatment facility, and industrial applications. Metazeal has a higher maximum operating temperature (212°F) compared to other CEVA® Expansion Joint seals. When installed within the CEVA® Joint Systems, the material acts as a water tight seismic expansion joint seal.

Additional features include applications in hydrostatic environments. Metazeal can be installed in ponding/standing water and is safe for use in potable and processed water applications.

Metazeal meets ADA criteria for ground and floor surfaces as stated in the rules and regulations section of the Federal Register Volume 58 no.144, US Access Board.

FEATURES	BENEFITS
Dynamic movement range of -50%, +25% & ± 50% shear	Suitable for use in seismic applications
Waterproof	Provide water tight seals in gasket applications
Withstand up to 70 ft. of head pressure	Can be used in below grade applications
Maximum operating temperature of 212° F	Can be used in high heat applications
Ease of installation	Decreased installation time resulting in labor savings
Closed cell design	Creates water tight seal
Field directional changes & heat welds	Ideal for stage construction or segmental repairs.

USES

Applications

- Expansion joints
- Seismic joints
- Gaskets
- Seismic retrofit
- Cast-in-place joints

Locations

- Bridges/Highways/Tunnels/Airport Runways
- Commercial Buildings
- Water Treatment Facilities
- Tanks/ Pools
- Industrial Facilities
- Parking Garages

TECHNICAL DATA		
Properties	Test Method	Typical Properties
Compression Set	ASTM D3575 Suffix B	2 hr Recovery 9% Set
Elongation	ASTM D3575 Suffix T	152-245%
Density	ASTM D3575 Suffix W	1.8 – 2.5 lbs/ft³ avg.
Water Absorption	ASTM 3575 Suffix L	.03 lbs/ft² avg.
Weatherability	ASTM G154 3000 Hrs	No chalking, flaking, blistering, checking & cracking
	HH-F-341a	No Degradation
Tensile	ASTM D3575 Suffix T	110-130 psi (avg.)
Tear Resistance	ASTM D3575 Suffix G	16 lbs/in
Thermal Stability	ASTM D3575 Suffix S	5.9% Max
Meets ASTM 1056 Type 2, Class B, Grade 2 & AASHTO T-42-84 Modified		

Substrate

- Concrete
- Elastomeric Concrete
- Steel
- Wood
- Most construction materials

MOVEMENT CAPABILITY

Metazeal is capable of functioning between 50% compression and 25% tension as well as handling up to 50% horizontal or vertical shear movement.

SIZING GUIDELINES

Metazeal is typically sized 25% larger than the joint opening. The amount of compression will vary due to seasonality, temperature and designed movement of the joint. Please contact your sales representative for assistance.

ENGINEERED SURFACE PROTECTION

CEVA® Joint materials come manufactured with Engineered Surface Protection (E.S.P.) grooves along the sides of the foam which increase the surface area of the contact surface to the substrate resulting in enhanced bonding performance. These E.S.P. grooves are ¼" - ½" apart (6mm – 13mm) and approximately 1/8" deep x 1/8" (3mm x 3 mm) wide running the entire length of the joint.

PERFORMANCE INSTALLATION ENHANCEMENT

For joint openings exceeding 3 inches in width and depth, Performance Installation Enhancement or P.I.E. is recommended. P.I.E. is the beveling of the bottom edge of the joint, creating a trapezoidal shape which is easier to install into the joint opening.

JOINT MATERIAL LIMITATIONS

Directional Changes: All directional changes in Joint Material must be done using the heat welding method. This is done by placing the Joint Material ends against a Teflon coated heating iron at 350°F (176°C) for 10 – 20 seconds. The ends are then pushed tightly together resulting in a fusion bond. Heat welds are not required for all turns. For vertical turns, the maximum angle the joint material can sustain without heat welding is 115°. For horizontal turns, the maximum angle the joint material can sustain without heat welding is 135°. Heat welds will add to the aesthetics of an installation and are strongly recommended for all 90° turns.

Joint Variations: If a joint opening is not uniform, please contact your local sales representative for sizing assistance.

Skews: Metazeal does not have skew limitations.

Operational Temperature Range: The physical and chemical properties of the Joint Material do not alter significantly within the recommended temperature range of -94°F to 212°F (-70°C to 100°C).

Maximum Joint Opening: When the expansion joint is being used to support pedestrian or vehicular traffic, the use of a cover plate should be considered on joint openings larger than 4".

Storage: Joint material shall be stored in an area that maintains temperature between 50°F (10°C) and 90°F (32°C).

INSTALLATION PROCEDURES

Surface Preparation: Brush blast all concrete surfaces in direct contact with joint seal. Concrete surfaces should be free of all contaminants and latent build up. Blow or vacuum dirt or debris from the joint openings and joint surfaces with oil free compressed air. Steel surfaces must be cleaned to SSPC 10 or better. Ensure that all moisture is removed from steel surfaces prior to applying the bonding agent. Use of a propane wand is acceptable.

Seal Installation: The manufacturer's published installation procedures shall be followed at all times. Mask the areas adjacent to the joint opening. One suggestion is to use approximately 12" (300mm) of plastic sheeting and tape along edges to keep the surrounding areas clean. Be sure that the tape does not actually go into the joint opening but back approximately 1/8" (3mm) from the joint edge.

Lay out joint material next to its joint opening to check for appropriate length and width. Joint should be sized at a minimum of 25% larger than joint opening at near neutral but never less than 10% oversized. Heat welds and other directional changes should be cut and made. All welds should be allowed to cool before mixing the adhesive.

Begin mixing the epoxy adhesive following the manufacturer's specified mixing procedures and start at one end or at an intersection or corner. Apply the epoxy adhesive to both sides of the substrate surfaces.

Apply enough adhesive to coat the substrate to an approximate thickness of 40 mils (1mm). It is not recommended to apply the bonder more than 20' (6m) ahead in order to avoid curing before the joint material is inserted into the opening.

Next, apply the epoxy adhesive to both sides of the joint material (sides with the E.S.P. grooves). Apply enough to coat and fill the grooves on the joint material, approximately 40 mils (1mm) thick. Install the coated material at the curb, intersection, or corner, where the epoxy was initially applied on the substrate.

The joint material should be recessed 1/8" (3mm) below the joint edge and should not protrude above the joint opening.

Continue in the same direction as the epoxy was initially applied. DO NOT push at an angle or pull the material, as this will stretch the material and is unacceptable. Working the material in a serpentine method is preferred to avoid pulling and stretching.

Clean the excess epoxy from the surface of the material as soon as it is installed at the desired depth. DO NOT allow the epoxy to cure before attempting to remove it. Use a clean trowel or a putty knife tilted at an angle opposite the direction of movement. DO NOT allow any epoxy bonder near any area to be cut and welded until the after the weld is completed otherwise it may not hold. Once the joint is installed and cleaned, remove the tape from the joint edges before the epoxy cures.

Allow the bonder to set (approximately 20 minutes, at 77°F (25°C)), before traffic is allowed onto the joint. Slightly longer time is required during cooler weather.

When a continuous joint cannot be finished, the epoxy bonder on the substrate and also on the joint material must terminate at the same point. Install the joint material past the epoxied surfaces at least 6 to 12 inches (150-300mm). This “loose” material can be pulled out later to be heat welded, additional bonder applied and the installation continued.

PACKAGING

Metazeal is custom fabricated to order. Please contact your local sales representative for size and availability.

MANUFACTURER’S CERTIFICATIONS

Available upon request.

MANUFACTURING TOLERANCES

Metazeal shall be manufactured to the thickness and width described in the contract plans within a depth tolerance of $\pm 5\%$ and a width tolerance of $\pm 2\%$.

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