

METAZEAL®

**CSI Section 05800
07915
Joint Seals**

Metazeal® is a pre-formed closed-cell low-density foam material that can be used as a joint sealer/filler in our CEVA® expansion joint systems or as a gasket. It has a higher maximum operating temperature of 212°F than our other pre-formed closed-cell low-density foam expansion joint seals.

PRODUCT DESCRIPTION

Metazeal is a gray colored pre-formed closed-cell low-density foam joint seal. The material is typically used as an expansion joint seal or as a gasket in bridge, commercial building, parking, water treatment facility, and industrial applications. Metazeal has a higher maximum operating temperature of 212°F when compared to our other pre-formed closed cell foam expansion joint seals. This makes Metazeal ideal for applications with higher inservice temperatures such as industrial tanks / facilities and armored expansion joints. When installed in our Ceva Joint Systems, the material acts as a water tight seismic expansion joint seal.

Additional features include the ability of the material to be installed in applications with standing water or once installed (bonding agent cured) to withstand hydrostatic pressure. Metazeal is typically recessed 1/8" (3mm) below the surface of the joint opening. As the material is relatively flush to the surface, it is self-cleaning and rejects debris. Metazeal® material 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
<ul style="list-style-type: none"> When installed with our Ceva expansion joint systems, the moves within 50% compression and 25% tension Once installed, Metazeal can withstand up to 70 feet of head pressure. Directional changes and heat welds can be done in the field. Higher maximum operating temperature of 212°F 	<ul style="list-style-type: none"> Seismic Joint Chemically resistant 100% water tight Safe for potable water. Ideal for stage construction or segmental repairs. Can be used as the primary seal in the Ceva FR System

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
- Parking Garages
- Industrial Facilities

Substrates

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

PHYSICAL REQUIREMENTS		
Test	Test Method	Result
Compression Set	ASTM D3575 Suffix B	25% Compression 1/2hr Recovery 9% Set 24hr Recovery 3.6% Set
Extrusion	ASTM D545	.25" (6.4mm) max
Elongation	ASTM D3575 Suffix T	152% - 245%
Density	ASTM D3575 Suffix W	2.12 lbs/ft ³ avg. (34 kg/m ³) avg.
Water Absorption	ASTM 3575 Suffix L	.03 lbs/ft ² avg.
Tensile	ASTM D3575 Suffix T	101 psi min. (700 KPa) min.
Shore Hardness	ISO 868 1985 00 Scale	55
Tear Resistance	ASTM D624	16 lbs/in ² min. (110 KPa) min.
Thermal Conductivity	ISO 8302 1991	.039 W /m.K
Meets ASTM 1056 Type 2, Class B, Grade 2 & AASHTO T-42-84 Modified		

MOVEMENT CAPABILITY

Metazeal is capable of working in 50% compression and 25% tension when used in our Ceva Expansion Joint Systems with the appropriate Eva-Pox Bonding Agent. Metazeal can handle up to 50% ± total horizontal or vertical shear movement.

SIZING GUIDELINES

Metazeal is typically sized 25% larger than the joint opening but can vary from a minimum of 10% to a maximum of 35%. The amount of compression will vary due to seasonality, temperature and designed movement of the joint. Please see our sizing chart and contact your sales representative for appropriate sizing for your application.

ENGINEERED SURFACE PREPARATION

When bonded in place with an Eva-Pox Bonding Agent, the Joint Material shall have E.S.P. (Engineered Surface Preparation) grooves along the bond surfaces at a distance of no less than 1/4" and no more than 1/2" apart (6mm - 13mm). The grooves are approximately 1/8" deep x 1/8" (3mm x 3mm) wide and run the entire length of the joint, increasing the bond surface for enhanced bond performance.

WARRANTY

Manufacturer WARRANTS that the product conforms to its chemical description and is reasonably fit for the purpose stated on its Technical Bulletin when used in accordance with its directions. Manufacturer makes NO OTHER WARRANTY either expressed or implied. Buyer assumes all risk in handling. For further Technical or Application Information, contact Chase Construction Products

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PERFORMANCE INSTALLATION ENHANCEMENT

On joint material exceeding 3 inches in width and depth, Performance Installation Enhancement or P.I.E. is recommended. When P.I.E. is added to the joint material, an additional inch of depth is added for beveling. This bevel creates a natural trapezoidal shaped product that is easier to install.

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 placed together tightly and fusion bonded. Heat welds are not required for 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 required for horizontal 90° turns.

Joint Variations: If a joint opening is not uniform, the limits of the joint opening for the specified seal size are as follows:

Maximum limit for increase in joint opening is 8%

Maximum limit for decrease in joint opening is 13%

If the limits stated above are exceeded, it is recommended that different size joint material be spliced together to ensure compliance.

Skews: Metazeal® does not have skew limitations. Please be aware that the working limitations of 50%± shear, 50% compression and 25% tension for the joint material must be adhered to.

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 subjected to pedestrian or vehicular traffic, the following limitations apply:

Vehicular Traffic: Maximum Joint Opening of 6" with out a coverplate.

Pedestrian Traffic: Maximum Joint Opening of 4" with out a coverplate.

Non-Traffic Applications: Maximum Joint Opening of 38"

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

PLEASE BE AWARE THAT STORAGE CONTAINERS ARE NOT ACCEPTABLE MEANS OF STORAGE IF THEY EXCEED 90°F (32°C).

MANUFACTURING TOLERANCES:

The preformed Joint Material shall be the thickness and width described in the contract or on the plans within a depth tolerance of +10% to -5% and a width tolerance of +2% to -2%.

INSTALLATION PROCEDURES:Surface Preparation:

Brush blast all concrete surfaces in direct contact with joint seal. Concrete surfaces should be free of all contaminants and laitence

build up. Blow 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 manufacturers 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 25% larger than joint opening at near neutral but never less than 10% oversized or greater than 35% oversized. Heatwelds 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 concrete substrate surfaces.

Apply enough adhesive to coat the substrate to an approximate thickness of 40mils (1mm). Apply the epoxy bonder on both surfaces working it in the direction ahead of the joint material, not more than 20' (6m) ahead.

Apply the epoxy adhesive to both sides of the joint material. Apply enough to coat and fill the grooves on the joint material, approximately 40mils (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 installed 1/8" (3mm) below the joint edge and should not protrude above the joint edge.

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.

Clean the epoxy left on the surface of the material as soon as it is pushed into the desired depth. DO NOT allow the epoxy to cure before removing 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 weld is completed otherwise the weld will 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 end evenly. Install the joint past the epoxied surfaces at least 6 to 12 inches (150 - 300mm) dry, or without epoxy. This can be pulled out later to be re-welded and the installation continued.

WARRANTY

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Standard sizes and lengths are available for next day shipment. Please contact your sales representative for available sizes & lengths.

Metazeal can also be custom fabricated to your specific order. Material can be fabricated to any width between 1/2" to 38" in 1/16" increments. Maximum depth of the material is 6". Typical lead time for custom fabricated orders is 3-10 business days. Lead time will vary due to order size and volume.

MANUFACTURER'S CERTIFICATIONS:

"Manufacturer's Certifications" are available on material.

"Manufacturer Representatives" are available for on site representation if requested; the representative will certify materials and proper installation procedures. This is required by the manufacturer in order to qualify for any warranty either expressed or implied.

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APPENDIX ONE

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SIZING GUIDELINES

Metazeal is sized based on temperature, season, and anticipated or designed movement. Material is typically installed between 10% and 35% larger than the joint opening. With documented permission from Chase Construction Products, the material may be installed under greater compression. Please contact your sales representative for appropriate sizing.

SIZING GUIDELINES								
Product Code	Joint Opening 70° F (21° C)	Installation Range		Material Size		Movement Range 70° F (21° C)		
		Min. Installation Width	Max. Installation Width	Mat. Width	Mat. Depth	Compression	Tension	Range
MZ 1.00	.75 19.05	.68 17.15	.49 12.38	1.00 25.40	1.00 25.4	0.50 12.7	1.25 31.75	.75 19.05
MZ 1.25	1.00 25.4	0.90 22.86	0.65 16.51	1.25 31.75	2.00 50.80	0.63 15.88	1.56 39.69	0.94 23.81
MZ 1.875	1.50 38.10	1.35 34.29	0.98 24.77	1.88 47.63	2.00 50.80	0.94 23.81	2.34 59.53	1.41 35.72
MZ 2.188	1.75 44.45	1.58 40.01	1.14 28.89	2.19 55.56	2.00 50.80	1.09 27.78	2.73 69.45	1.64 41.67
MZ 2.50	2.00 50.80	1.80 45.72	1.30 33.02	2.50 63.50	2.00 50.80	1.25 31.75	3.13 79.38	1.88 47.63
MZ 2.8125	2.25 57.15	2.03 51.44	1.46 37.15	2.81 71.44	2.50 63.50	1.41 35.72	3.52 89.30	2.11 53.58
MZ 3.125	2.50 63.50	2.25 57.15	1.63 41.28	3.13 79.38	2.50 63.50	1.56 39.69	3.91 99.22	2.34 59.53
MZ 3.4175	2.75 69.85	2.48 62.87	1.79 45.40	3.42 86.80	2.50 63.50	1.71 43.40	4.27 108.51	2.56 65.10
MZ 3.75	3.00 76.20	2.70 68.58	1.95 49.53	3.75 95.25	3.00 76.20	1.88 47.63	4.69 108.51	2.56 65.16
MZ 4.0625	3.25 82.55	2.93 74.30	2.11 53.66	4.06 103.19	3.00 76.20	2.03 51.59	5.08 128.98	3.05 77.39
MZ 4.375	3.50 88.90	3.15 80.01	2.28 57.79	4.38 111.13	3.00 76.20	2.19 55.56	5.47 138.91	3.28 83.34
MZ 4.6875	3.75 95.25	3.38 85.73	2.44 61.91	4.69 119.06	3.00 76.20	2.34 59.53	5.86 148.83	3.52 89.30
MZ 5.00	4.00 101.60	3.60 91.44	2.60 66.04	5.00 127.00	3.50 88.90	2.50 63.50	6.25 158.75	3.75 95.25
Meets ASTM 1056 Type 2, Class B, Grade 2 & AASHTO T-42-84 Modified								

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