PRODUCTS

Materials · Coatings · Hardware · Product Category Specifications · Fabrication

1 EPS CORE MATERIAL — PROPERTIES BY ASTM TYPE & DENSITY

EPS core material shall comply with ASTM C578. Select density type based on design loads, coating system, and project performance requirements.

ASTM Type	Nom. Density (lb/ft³)	Compressive Str. 10% (psi)	Flexural Str. (psi)	Shear Str. (psi)	R-value/ inch	Typical Application
Type I (EPS15)	0.90–1.14	10–14	25–30	18–22	3.85	General decorative elements, signage cores, interior applications
Type VIII (EPS19)	1.15–1.34	13–18	30–38	23–25	3.92	Moderate-load decorative elements, exterior columns ≤30 ft
Type II (EPS22)	1.35–1.79	15–21	40–50	26–32	4.17	Standard exterior architectural elements, SIP cores, façade panels
Type IX (EPS29)	1.80–2.20	25–33	50–75	33–37	4.35	High-load columns, roofing elements, wind zone 3+ applications
Type XIV (EPS39)	2.40–2.80	35–50	60–90	40–48	4.50	Heavy structural panels, bridge deck formwork, extreme wind zones
Type XV (EPS46)	2.80–3.50	50–75	75–110	48–60	4.60	Maximum structural demand; SIP cores for hurricane-rated assemblies

2 POLYURETHANE / PIR CORE MATERIAL — PROPERTIES BY TYPE

Type / Standard	Density (lb/ft³)	Cell Type	Compressive Str. 10% (psi)	R-value/ inch	Primary Use
PU Open-cell SPF (ASTM C1029 Type I)	0.4–0.6	Open	0.1–0.5	3.7	Cavity fill, air sealing, acoustic absorption (NRC 0.70–0.95)
PU Closed-cell SPF (ASTM C1029 Type II)	1.5–2.0	Closed	20–35	6.2	Continuous insulation, air/vapor barrier, structural cavity fill
Rigid PU/PIR (ASTM C591 Type II)	2.5	Closed	35	6.1	High-R ci panels, roof insulation, structural panels
Rigid PU/PIR (ASTM C591 Type III)	3.0	Closed	45	6.3	High-load ci, commercial roofing, hurricane-zone applications
HD Rigid PU (ASTM C591 Type VI)	6.0	Closed	125	5.8	Industrial, cold storage, maximum structural demand

3 PROTECTIVE POLYUREA COATING SYSTEM

Polyurea protective coating shall be a 100% solids, two-component, aromatic or aliphatic polyurea elastomer system applied by high-pressure, heated plural-component spray quipment. Coating shall be applied to all exposed EPS or PU foam surfaces prior to application of architectural finish coats.

Property	Test Method	Requirement	Unit
Coating Thickness — Standard	DFT gauge	20–40	mil
Coating Thickness — Heavy-duty	DFT gauge	60–120	mil
Tensile Strength (min.)	ASTM D412	≥ 2,500	psi
Elongation at Break (min.)	ASTM D412	≥ 200	%
Shore D Hardness	ASTM D2240	55–75	—
Adhesion to EPS — Pull-off (min.)	ASTM D4541	≥ 250	psi
Flame Spread Index (max.)	ASTM E84	≤ 25	—
Smoke Developed Index (max.)	ASTM E84	≤ 450	—
UV Weathering Resistance	ASTM G154	Pass — 1,000 hr min	—
Water Absorption (max.)	ASTM D570	≤ 1	% by weight
Service Temperature Range	—	-40 to +200	°F
Gel Time (fast system)	—	3–7	seconds
Tack-Free Time	—	< 30	seconds

4 PRODUCT CATEGORY SPECIFICATIONS

ARCHITECTURAL COLUMNS

• Types: Round, Square, Tapered (entasis), Classical Orders (Doric, Ionic, Corinthian, Tuscan, Composite)
• Diameter range: 4 inches to 60 inches; custom sizes available
• Height: up to 40 feet in sectional assembly; single-piece up to 14 feet
• Core: EPS Type II minimum (Type IX recommended for exterior/coastal); PU/PIR available on request
• Sections: single-piece or sectional with concealed staggered slip-joint connections
• Bases and capitals: integrated or separate; classical profiles per architect's drawings
• Internal reinforcement: steel pipe armature available for structural continuity where required by PE
• Finish: polyurea base coat + exterior architectural topcoat; smooth, textured, or custom profiles
• Applications: porticos, colonnades, entryways, façade features, resort/hospitality, monument structures

CORNICES, MOLDINGS, TRIM & SURROUNDS

• Types: crown molding, bed molding, band molding, window surrounds, door surrounds, keystones
• Profile library: classical profiles plus full custom CNC-profiled geometry per architect's drawings
• Core: EPS Type I minimum; Type II recommended for exterior applications
• Typical thickness range: 1 inch to 12 inches projection; lengths to 20 feet
• Joints: mitered, scarfed, or overlapping; sealed with compatible flexible sealant
• Finish: smooth painted, textured stucco-look, stone-replicated, or custom architectural coatings
• Compatibility with EIFS, stucco, painted wood, and standard exterior finish systems

MONUMENT SIGNS & 3D BRANDING STRUCTURES

• Types: freestanding monument signs, dimensional lettering, 3D logo structures, entry pylons
• Core: EPS or PU/PIR depending on structural requirements and exposure conditions
• Dimensional lettering: any font, any size; maximum practical height 8 feet per letter
• Sign cabinet depth: custom from 2 inches to 36 inches relief
• Surface: polyurea base + paint/coating for weather resistance; illumination cutouts available
• Internal steel armature and base plate anchor systems per structural engineer's drawings
• Applications: retail, hospitality, real estate, institutional, municipal entry features

DECORATIVE BEAMS, BRACKETS & CORBELS

• Types: exposed ceiling beams, faux timber posts, wall brackets, structural-look corbels, rafter tails
• Profiles: rectangular, tapered, hand-hewn texture, smooth architectural, custom cross-sections
• Dimensions: custom per drawings; typical spans up to 20 feet in single piece
• Core: EPS Type II or Type IX depending on exposed span and load requirements
• Surface: textured polyurea replicating wood grain, stone, or custom architectural finish
• Hollow or solid construction; hollow beams suitable for concealed electrical/mechanical routing
• Mounting: internal blocking nailers or through-bolt attachment systems per structural requirements

FACADE PANELS & CLADDING SYSTEMS

• Types: flat insulated panels, profiled architectural panels, lap siding profiles, wainscot systems
• Core: EPS Type II or Type IX; PU/PIR closed-cell for high-R applications
• Panel size: custom to project; standard modules available; maximum CNC billet size 36"x48"x192"
• Thermal performance: R-8 to R-30+ depending on core type and thickness
• Surface: textured polyurea + exterior architectural finish; faux stone, brick, wood, or smooth
• Attachment: mechanical fastener systems per ICC-ES AC71; adhesive-mechanical hybrid available
• Wind load compliance: design per ASCE 7-22 with engineering calculations provided by our company

FAUX MATERIAL SYSTEMS

• Faux Wood: EPS or PU core with hand-textured polyurea replicating cedar, oak, pine, weathered timber
• Faux Stone: irregular profiles replicating limestone, fieldstone, sandstone, cut stone
• Faux Brick: modular panel or individual unit profiles; mortar joint detail available
• Faux Concrete: board-formed, broom-finished, or smooth architectural concrete texture
• Color: integral pigmented topcoats; multi-tone hand-stained finishes available
• Performance: fully waterproof; significantly lighter than real material counterparts
• Applications: interior accent walls, exterior feature walls, retail/hospitality environments

CUSTOM SCULPTURAL & ARTISTIC ELEMENTS

• Capability: fully custom three-dimensional forms from digital files (STL, OBJ, DXF)
• Typical projects: themed environments, retail experiential installations, large-scale sculptures
• Core: EPS Type II or higher; PU/PIR for complex thin-wall geometries
• Maximum single-piece dimensions: 36" x 48" x 192" (billet); larger elements sectional assembly
• Digital-to-physical workflow: client supplies 3D model; our company engineers toolpath and produces
• Finish: polyurea + custom coating matching any architectural or brand color specification

STRUCTURAL INSULATED PANEL (SIP) CORES

• Core materials: EPS Type II, Type IX, or PU/PIR closed-cell per structural requirements
• Core thickness: 3.5 to 12.25 inches standard; custom thicknesses available
• Core R-values: EPS R-14 to R-50+; PU/PIR R-21 to R-80+ depending on thickness and type
• Facings: OSB, plywood, steel, aluminum, fiber cement, or custom facings bonded by others
• Dimensional tolerance: ±1/8" per 10 feet per ASTM C578 dimensional stability requirements
• Applications: wall panels, roof panels, floor panels, cold storage construction
• Engineering: structural calculations for SIP assemblies available from our company engineering

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