MagneLine ™

# MATERIAL SPECIFICATIONS & CHARACTERISTICS

**Material Name:** **MagneLine**

**Material Type:** **Polymer Cement Mortar**

**Mixture of Emulsion (Acrylic Ester Polymer Acid Macro-Molecule Complex) and Compound (Cement with Aggregate)**

| TESTING CONDUCTED | TESTING STANDARD | RESULTS |
|---|---|---|
| **PHYSICAL PROPERTIES** | | |
| Adhesive Strength Test | Japan Construction Standard Adhesive Test* | Over 1.5 $N/mm^2$ with Concrete |
| | | Shear Adhesive Strength: over 6.0 $N/mm^2$ |
| | Japan Construction Standard Adhesive Test* | Over 2.0 $N/mm^2$ with Steel |
| Impact Strength Test | Japanese Industrial Standards JIS G 3492* | No effect from 650g Steel Ball 2.4m drop |
| Compressive Strength Test | Japanese Industrial Standards JIS A 1171* | Over 24.0 $N/mm^2$ |
| Bending Strength Test | Japanese Industrial Standards JIS A 1171* | Over 6.0 $N/mm^2$ |
| Tensile Strength Test | Japanese Industrial Standards JIS A 1113* | Over 2.4 $N/mm^2$ |
| Static Modulus of Elasticity | Japanese Industrial Standards JIS A 1149* | $1.89x10^4$ $N/mm^2$ |
| Stretchability Test (Type I) | Japan Highway Public Corp Standard | 0.3mm after WS 700 hours |
| Thermal Expansion Coefficient | Japanese Industrial Standards JIS A 1325* | $1.3 \times 10^{-5}$ /K |
| **DURABILITY** | | |
| Accelerated Weathering Test | Japanese Industrial Standards JIS K 5400* | No change after 3000 hours |
| Salt Fog Spray Test | Japanese Industrial Standards JIS K 5400* | No change after 4000 hours |
| Alkaline Resistance Test | Japanese Industrial Standards JIS K 5400* | No change after 720 hours |
| Ozone Resistance Test | | No change after 30 years Exposure Equivalent |
| Freeze-Thaw Cycle Test | Japan Highway Public Corp Standard JHS308 | 300 cycles with no weight change |
| Salt Penetrability Test | Japan Highway Public Corp Standard | $0.7x10^{-3}$ $mg/cm^2/day$ |
| Carbonation Resistance Test | Japanese Industrial Standards JIS A 1153* | No penetration with MagneLine, 5mm without |
| Water Submersion Test | Japanese Industrial Standards JIS K 5400* | Adhesive Strength after 3000 hours: 1.9 $N/mm^2$ |
| Abrasion Impact Test | Los Angeles Test Machine (ASTM C535/C882/C1042) | No peel off after 1000 rotations |
| Abrasion Test | JIS K 7204 Abrasion Ring/9.8N Loading (ASTM C779) | Abrasion Loss 3.05g after 1000 rotations |
| **OTHERS** | | |
| VOC/Formaldehyde Emission | Japanese Industrial Standards JIS K 5601-4-1* | 0.05g/L |

* Comparable ASTM will be supplied upon request