



Dow Construction Chemicals

## Formulating two-component cementitious waterproofing membranes

PRIMAL™ AS-8012 Styrene Acrylic Emulsion Polymer



*Long-term protection  
of building structures*



## Introducing PRIMAL™ AS-8012 Styrene Acrylic Emulsion Polymer

- Dow's latest generation of binders specially designed to support durable waterproofing
- Offering high flexibility and elongation as well as tensile strength
- Supporting long-term protection of building structures
- Helping to raise construction and quality

### A watertight approach to polymer development

Whether it's protecting concrete and masonry substrates from wet weather conditions, surface water splash, ground moisture ingress or the destructive action of soluble salts, responsible building designers and owners want to ensure the best possible defences.

Highly flexible cementitious waterproofing membranes, applied with a brush, roller or spray cure to form a flexible coating preventing water penetration and providing crack-bridging.

Key to the performance capabilities of the final membrane are the technical characteristics of the polymer which must provide essential properties to the waterproofing mortar including adhesion at the mortar-substrate interface and act as an effective binder to hold together filler particles.

### Performance requirements

Cementitious membranes are expected to offer excellent resistance to water and long-term weathering, even when permanently exposed. High water vapour permeability helps avoiding issues such as blistering, and high toughness and scratch resistance offer durability. The systems must be easy to apply, even on complex, uneven surface shapes, and result in fully-bonded surfaces with no joints.

### Critical requirements of two-component cementitious waterproofing membranes:

- Flexibility: crack bridging
- Water impermeability: water tightness
- Adhesion to concrete
- Low water absorption

Such performance benefits have led to their widespread use in applications such as waterproofing wet areas, basement walls, swimming pools, balconies, facades terraces and waste-water drains. Flexible systems are also used as protective surface-coatings for concrete structures.

### The importance of polymer choice

Polymers act as the binder to bring adhesion, flexibility and water resistance to waterproofing membranes – which are core requirements for such systems. Effective polymers must therefore offer:

- Good film formation behaviour: suitable emulsion polymers deflocculate particles which results in a tight, non-porous, film
- Stability in cement-based mixtures
- Wet mortar properties (ease of application)
- Water and alkali resistance
- A good balance between flexibility and tensile strength
- Low glass transition temperature (Tg)

## PRIMAL™ AS-8012 Acrylic Emulsion Polymer – performance features and benefits

PRIMAL™ AS-8012 Acrylic Emulsion Polymer has been designed to offer manufacturers of two-component, cementitious waterproofing systems an excellent balance of performance features and mechanical properties.

| Features                                       | Benefits   |
|--|--|
| ✓ Balanced mechanical properties               | ✓ Imparts high tensile strength as well as elongation  |
| ✓ Tailored polymer design                      | ✓ Good water and alkali resistance   |
| ✓ Specifically designed for waterproof coating | ✓ Supports formulation of a final product with excellent impermeability and crack bridging performance |
| ✓ Excellent powder compatibility               | ✓ Improved formulation stability and workability compared to previous polymers                         |

| Typical Properties             |                 |
|--------------------------------|-----------------|
| Appearance                     | Milky White     |
| Polymer Type                   | Styrene acrylic |
| Solid, by weight, %            | 56              |
| pH                             | 6               |
| MFFT, °C                       | <0              |
| Tg                             | -8              |
| Viscosity (LV_S3; 30rpm; 25°C) | < 1100          |

Please note that the values shown are typical values for your guidance. They are not to be taken as specifications and are subject to certain variability. Please consult the sales specifications for details.

## Supporting standards

Selecting the right polymer is vital in the production of qualified waterproofing materials that can meet key standards in the sector.

**European standard EN 14891-2007:** covering liquid applied water impermeable products for use beneath ceramic tiling bonded with adhesives PRIMAL™ AS-8012 has been designed to help achieve required performance standards in classes O (external application, crack-bridging capability at low temperatures) and P (swimming pool application, resistant to contact with chlorinated water).

## Environmental performance

PRIMAL™ AS-8012 Styrene Acrylic Emulsion Polymer is APEO-free<sup>1)</sup> and formaldehyde-free<sup>2)</sup>, and has very low Volatile Organic Content (VOC), helping manufacturers to fulfil required product standards without compromising on their commitment to the environment.

## Production and packaging

PRIMAL™ AS-8012 Styrene Acrylic Emulsion Polymer is produced at Dow's expanded manufacturing sites in the Jebel Ali Free Zone (JAFZA), Dubai, UAE, and Gebze, Turkey. The product is available in drums, IBCs and in bulk.

**For more information on how you could benefit from PRIMAL™ AS-8012 Styrene Acrylic Emulsion Polymer in your two-component, cementitious, flexible waterproofing systems, contact your local Dow sales representative or visit [www.dowcc.com](http://www.dowcc.com).**

1) APEO is not intentionally added and is not knowingly introduced from another raw material

2) Made without formaldehyde or formaldehyde-generating materials and does not release formaldehyde under normal operating conditions. Dow however does not routinely analyze PRIMAL™ AS-8012 for formaldehyde or any other substances that are not listed in the Safety Data Sheet or Sales Specification

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