

Highly chemical resistant, fast cure, durable, one-component joint sealant

Uses

Sealing joints in:

- Chemical bund areas
- Floor joints in chemical processing plants
- Concrete joints exposed to acid spillage
- Swimming pools
- Sewage processing tanks
- Food, wine and citrus processing areas

Advantages

- Ready to use
- Fast rate of cure
- Long life weathering resistance
- Highly resistant to biological attack
- Highly resistant to a wide range of chemicals including strong acids and alkalis
- Highly resistant to pool chlorine, salt water chlorination and ozone treatment
- Potable water AS4020 certification
- Compatible with Durafloor N protection systems for concrete

Description

Emer-Seal CR is a one part, gun applied non sag joint sealant designed for sealing expansion and construction joints exposed to aggressive chemical environments. Emer-Seal CR utilises unique polymer technology which provides outstanding chemical resistance and cures by reaction with atmospheric moisture to form a tough flexible seal. Once cured, Emer-Seal CR is resistant to attack from most of the aggressive chemicals used in the food, mining and chemical processing industries.

Technical Support

Parchem offers a comprehensive range of high performance, high quality construction products. In addition, Parchem offers a technical support package to specifiers, end-users and contractors, as well as on-site technical assistance.

Design Criteria

Emer-Seal CR may be applied to joints between 8 mm and 50 mm wide. To minimise stresses imposed on the joint sealant, all moving joints should be designed to an optimum width to depth ratio of 2:1. This ratio is subject to the following overriding minimum sealant depths:

- 8 mm minimum sealant depth on non-porous surfaces

- 12 mm minimum sealant depth on porous surfaces such as concrete and masonry
- 20 mm minimum sealant depth in applications where the sealant is subject to a hydrostatic pressure or traffic

Care must be taken to ensure joint movement does not exceed the sealant's movement accommodation capability.

If uncertain about any of the design criteria, contact your local Parchem branch for further advice.

Properties

Data quoted is typical for this product but does not constitute a specification.

| | |
|--|--|
| Form: | Non slump, thixotropic paste |
| Hardness: - Shore A: | 32 ± 5 |
| Tensile modulus: 100% elongation: 100% Ultimate elongation: | 0.4 MPa @ 100% >1.0 MPa @ >400% |
| Colours: | Concrete Grey, Pool Blue Other colours to batch order |
| Physical or chemical change: | Chemical cure, moisture activated |
| Application temperature: | Minimum 5°C |
| Service temperature: | Minus 50°C - 150°C |
| Tooling time: | 20 minutes @ 25°C 65% RH |
| Cure rate: | Approx 3 mm in 24 hours, then 1 mm / day @ 25°C / 65%RH |
| Movement accommodation factor: | ± 25% butt joints (50% total) |

Chemical resistance - continuous immersion - (worst case testing - 6 months exposure)

* Important: Ensure that Emer-Seal CR is fully cured before it is subjected to chemical exposure. (Note: Service life for intermittent exposure will be significantly longer than indicated below)

| | |
|---|--------------------------|
| Acetic Acid 10% | Resistant, > 1 month |
| Acetic Acid 75% | Resistant, > 1 month |
| Acetic Acid Conc. (Glacial) | Resistant, > 1 month |
| Automotive Brake Fluid | Resistant, no attack |
| Chlorine (Sodium Hypochlorite) 2% | Resistant, no attack |
| Chlorine (Sodium Hypochlorite) 10% | Resistant, no attack |
| Citric Acid 10% | Resistant, no attack |
| Diesel Fuel 100% | Intermittent spillage OK |
| Detergent (GN8) 2% | Resistant, no attack |

| | |
|-----------------------------|----------------------------|
| Ammonium Nitrate 100% | Resistant, no attack |
| Ethanol 100% | Resistant, > 1 month |
| Heptane | Not resistant, <24 hours * |
| Hydrochloric Acid 10% | Resistant, > 1 month |
| Hydrochloric Acid 20% | Resistant, > 1 month |
| Hydrochloric Acid Conc. 36% | Not resistant, >2 hours * |
| Glycol 100% | Resistant, no attack |
| Lactic Acid 10% | Resistant, may discolour |
| Lactic Acid 25% | Resistant, may discolour |
| Motor Oil (unused) 100% | Resistant, no attack |
| Motor Oil (used) 100% | Resistant, no attack |
| Nitric Acid 10% | Resistant, > 1 month |
| Nitric Acid 25% | Resistant, > 7 days |
| Nitric Acid Conc. 70% | Not resistant, <1 hour * |
| Petrol, unleaded 100% | Not resistant, <24 hours * |
| Phosphoric Acid 10% | Resistant, no attack |
| Sodium Hydroxide 10% | Resistant, no attack |
| Sodium Hydroxide 25% | Resistant, no attack |
| Sodium Hydroxide 30% | Resistant, no attack |
| Sodium Hydroxide Conc. 50% | Resistant, no attack |
| Sugar Solution (saturated) | Resistant, no attack |
| Sulphuric Acid 10% | Resistant, no attack |
| Sulphuric Acid 25% | Resistant, no attack |
| Sulphuric Acid 50% | Resistant, no attack |
| Sulphuric Acid 75% | Resistant, > 1 month |
| Sulphuric Acid 98% | Not resistant, >2 hours * |
| Skydrol 100% | Resistant, > 1 month |
| Wine (Red) 100% | Resistant, no attack |
| Xylene | Not resistant, <24 hours * |

Note: * = suitable for intermittent exposure only.

Specification Clauses

Where so marked on the drawings, joints are to be sealed with a high performance joint sealant offering proven performance against chemical attack. The joint sealant must be capable of accommodating +/- 25% joint movement and should be accompanied by data confirming the level of resistance of the sealant to the chemicals in question.

Joint preparation, priming and sealant application must be in strict accordance with the current technical data.

The joint sealant must be manufactured in Australia by an ISO9001 accredited supplier. The joint sealant must be installed by a contractor nominated by the supplier.

Emer-Seal CR supplied by Parchem is such a product.

Applications Instructions

Joint preparation

Ensure that all joint dimensions are as specified, and that the anticipated joint movement is within the movement accommodation capability of Emer-Seal CR. New concrete must be allowed to cure for a minimum of 28 days before sealant installation.

Joint faces must be sound and completely dry, clean and frost free. Oil, grease, curing compounds, form release agents, and all surface contaminants must be completely removed by grinding the joint faces or by using Parchem Solvent.

Bond breakers and joint fillers

Joints subject to hydrostatic pressure must have the sealant supported by a suitable rigid joint filler such as Parchem Hydrocor. Joints subject to hydrostatic pressure must also contain a suitable waterstop such as a Fosroc Supercast PVC.

In joints not subject to hydrostatic pressure, a backing rod such as Expandafoam Backing Rod may be used. In formed joints a polyethylene bond breaker tape must be used to prevent sealant from adhering to the back face of the joint.

Note: do NOT use masking tape, electrical insulation tape or 'Gafa' tape as a bond breaker tape. Emer-Seal CR may bond to the tapes and result in the failure of the joint sealant.

Priming

All joint surfaces must be sound and free from any trace of surface contamination.

While Emer-Seal CR offers very good adhesion to concrete and masonry, the aggressive nature of the chemicals that come into contact with the sealant demand that primers be used on masonry substrates. Priming is not normally required on solvent cleaned glass (use only Parchem Solvent for cleaning), ceramic and metal surfaces. Where metal surfaces are treated with paints or other organic coatings, adhesion testing is recommended to ensure that adequate adhesion will be achieved.

Concrete and masonry surfaces must be primed with Primer 13, a two component epoxy primer which combines excellent chemical resistance with good hydrolytic stability, making this primer ideal for use in demanding chemical resistance applications. Emer-Seal CR used in conjunction with Primer 13 is suitable for use in permanently water immersed applications. Primer 13 must be touch dry before applying Emer-Seal CR sealant.

For advice on other applications, or where Emer-Seal CR is to be used with other substrates, contact your nearest Parchem sales office.

Emer-Seal® CR

Application

Fit the sausage of Emer-Seal CR into a suitable sausage gun and gun firmly into the joint. Ensure that the sealant is forced well against all joint surfaces to achieve good surface wetting and thus optimum adhesion. Guide the nozzle along the joint gradually, applying even pressure to the trigger. The joint must be filled completely at all points.

Tooling

Immediately after application the sealant should be tooled. Use a smooth tool to produce both the required surface finish and to assist in further forcing the sealant into good contact with the joint faces. The use of soapy water as a tooling aid is not recommended as the cure of the sealant may be adversely affected.

Clean up

Equipment should be cleaned promptly by wiping with Parchem Solvent, as cured sealant is very difficult to remove. Cured sealant can only be removed by mechanical methods. Soaking the equipment in Parchem Solvent makes removal of cured sealant easier.

Limitations

Elastomeric sealants such as Emer-Seal CR should not be applied in direct contact with bituminous materials. Emer-Seal CR is not designed to provide resistance to organic solvents. Contact Parchem for advice if organic solvent resistance is required.

Stabilised Chlorine containing "trichloroisocyanuric acid" may cause the breakdown of surface layers of Emer-Seal CR. Also, crystallized deposits may form on the surface of the sealant from reaction of the above trichloroisocyanuric acid and urea if regular pool cleaning is not done.

Emer-Seal CR has been tested for resistance to many chemicals including Sulphuric Acid, Hydrochloric Acid and Caustic solutions. For information regarding the resistance of Emer-Seal CR to specific chemical solutions, contact Parchem.

Estimating

Supply

Emer-Seal CR: 600ml sausage

| Product Code | Description |
|--------------|-----------------------------------|
| 610501 | Emer-Seal CR Concrete Grey 600ml |
| 610502 | Emer-Seal CR White 600ml |
| 610503 | Emer-Seal CR Pool Blue 600ml |
| 610505 | Emer-Seal CR Special Colour 600ml |

Primer 13: 250 ml units
(Base and Hardener, supplied in the correct proportions
Complete units must be mixed to ensure correct curing)

Parchem Solvent: 4 and 20 litre drums

Coverage

Each 600 ml sausage will seal approximately 3 metres of a 20 mm x 10 mm joint.

Storage

Shelf life 12 months when stored in unopened original containers in dry conditions, between 5°C and 30°C.

Important notice

A Safety Data Sheet (SDS) and Technical Data Sheet (TDS) are available from the Parchem website or upon request from the nearest Parchem sales office. Read the SDS and TDS carefully prior to use as application or performance data may change from time to time. In emergency, contact any Poisons Information Centre (phone 13 11 26 within Australia) or a doctor for advice.

Product disclaimer

This Technical Data Sheet (TDS) summarises our best knowledge of the product, including how to use and apply the product based on the information available at the time. You should read this TDS carefully and consider the information in the context of how the product will be used, including in conjunction with any other product and the type of surfaces to, and the manner in which, the product will be applied. Our responsibility for products sold is subject to our standard terms and conditions of sale. Parchem does not accept any liability either directly or indirectly for any losses suffered in connection with the use or application of the product whether or not in accordance with any advice, specification, recommendation or information given by it.