

CHEMSPRAY™ 790LP

Hybrid polyurea, spray-applied waterproofing membrane

Product Description

Two-part, moderately fast-curing, hybrid polyurea, spray-applied elastomeric coating. It provides a premium quality, high build, long-life protective coating to concrete and metal substrates on major civil, infrastructure and commercial construction projects. Formulated using the latest polyurea technology, it forms an impenetrable barrier that is resistant to water, many chemicals and wear.

Features

GCP®CHEMSPRAY™ 790LP is a low toxicity elastomer system, containing no TDI, MOCA, bitumen or tar-based compounds.

Being polyurea-based, it has good resistance to humidity during application and forms a tough, bubble-free, impermeable coating.

GCP CHEMSPRAY™ 790LP is a simple 100:100 by volume mix ratio system that applies with improved flow out and rapid cure, resulting in a smooth, even coating finish that can be walked on in minutes.

The cured elastomer has high substrate adhesion plus excellent resistance to tear, puncture, chemicals, water and abrasion. Unlike rigid coating materials such as epoxies, vinyl ester, etc, GCP CHEMSPRAY™ 790LP resists post-application reflection cracking in concrete.

- Simple application – fast-cure
- Long-life – permanently flexible
- Slower cure provides smooth surface finish
- Resists reflection cracking in concrete
- Suitable for continuous immersion in fresh and salt waters plus desalination permeate

Uses

GCP CHEMSPRAY™ 790LP elastomer system is ideally suited for most areas of protective coating, lining and waterproofing in civil and commercial applications.

Used as a tough, flexible, waterproof membrane and coating, particularly over concrete substrates on:

- Water treatment plants
- Roof-decks
- Podium slab
- Water tanks
- Bridge-decks
- Tunnels

It is designed with a degree of self-levelling property allowing smoother finishing to undulating concrete surfaces.

GCP CHEMSPRAY™ 790LP is compatible with most stable, suitably prepared rigid substrates, including concrete, steel, aluminium, shotcrete, brick, block, render, fibre cement sheet, plywood and timber.

Preparation

See project specific Application Method Statement for detailed requirements. Generally, for concrete substrates use wet, wetabrasive or dry-abrasive blasting to remove laitance, etc.

Patch defects using suitable fairing compound.

Fill all joints, cracks, gaps and form angle fillets in internal corners or penetrations with SILCOR®LM PU Sealant.

Typical Properties

PROPERTY	TYPICAL VALUE	TEST METHOD
Mix Ratio - Polyamine : Iso (by volume)	100 : 100	
Polyamine Viscosity (@ 25°C)	400 - 1000 mPa.s	ASTM D2196
Polyamine Specific Gravity (@ 25°C)	1.03 g/ml	ASTM D1475
Isocyanate Viscosity (@ 25°C)	400 - 1000 mPa.s	ASTM D2196
Isocyanate Specific Gravity (@ 25°C)	1.11 g/ml	ASTM D1475
Gel Time (@ 25°C)	20 seconds	-
Tack Free Time (@ 25°C)	60 seconds	-
% Solids (v/v)	100%	-
Recommended Applied Thickness	1.5 mm	-
Return to Service		
- Light Foot Traffic	5 minutes	-
- Heavy Foot Traffic	2 hours	-
- Continuous Water Immersion	8 hours	-
- Paving, Topping, Backfill, Landscaping	8 hours	-
- Chemical or Abrasion Exposure	7 days	-

Shore A Hardness (minimum)	80 ± 5	ASTM D2240
Tensile Strength (minimum)	9.8 MPa	ASTM D412
Elongation (minimum)	350%	ASTM D412
Tear Strength (minimum)	44.0 N/mm	ASTM D412
Taber Abrasion Resistance (maximum)	220 mg	ASTM D4060
Crack Bridging	Pass	ASTM C836
Pull-Off Strength (minimum)		
- Inter-coat Adhesion	1.40 MPa	ASTM D4541
- Concrete (Primed) (Substrate Failure Occurred)	2.43 MPa	ASTM D4541
- Steel (90µm blast profile)	3.52 MPa	ASTM D4541

Blast or mechanically clean steel substrates to a 90µm surface profile.

Prime with GCP EPOCOTE™ F100W at 0.25kg/m² or AQUAGUARD™ M Primer at 0.15kg/m² dependent on substrate condition. Allow to dry approximately 2 to 5 hours depending on ambient conditions and surface porosity.

Application Equipment

GCP CHEMSPRAY™ 790LP is designed for application through high- pressure, plural component spray equipment capable of processing polyurea coatings.

Suitable equipment includes Graco Reactor E-XP2 or E-10 machinery fitted with high output heaters, heated lines and Graco Fusion Air Purge or Fusion CS impingement mix spray guns. Equipment should also be fitted with a drum mounted agitator for the polyamine component, material recirculation and drum mounted desiccant driers on both the polyamine and isocyanate components.

GCP CHEMSPRAY™ 790LP polyamine component must be agitated before and during use. The isocyanate component does not require agitation.

Typical machine spray settings required for GCP CHEMSPRAY™ 790LP application are:

Material Temperature	20 °C to 25 °C
Main Heater Temperature	60 °C to 65 °C
Line Heater Temperature	60 °C to 65 °C
Spray Pressure	2500 to 2800 psi

Round pattern spray gun mix chambers will minimise overspray produced considerably.

This product may also be suitable for 1:1 by volume, lowpressure dispensing machines fitted with static mix spray heads. Suitability should be determined by the user prior to application.

Application Guidelines

Substrate

Substrates must be clean, dry, and free of curing compounds, oil, grease, solvent or other contaminants. Moisture content of concrete must be below 5%.

Environmental Conditions

The following conditions must be achieved prior to and maintained during GCP CHEMSPRAY™ 790LP application.

Ambient Temperature	5 °C to 45 °C
Substrate Temperature	10 °C to 60 °C
Relative Humidity	85% maximum
Dew Point	3 °C below substrate
Approximate Wind Speed	10 knots maximum

Application

CHEMSPRAY™ 790LP is typically applied at a minimum Dry Film Thickness (DFT) of 1.5mm in one or more passes. Required application rates for specific projects may be higher or lower, dependent on structural design, area of application, project specification and product warranty required.

Please contact your local GCP representative or the GCP Technical Department for information specific to your project estimating requirements.

Surfacing

Where colour stability is required in sun exposed applications, apply our aliphatic, UV-stable topcoat, GCP ULTRAURE™ A-80 Non-Slip Top Coat where colour stable protection and a nonslip finish is required.

Coverage

1.1kg (1 litre) of GCP CHEMSPRAY™ 790LP system provides coverage of 1m² at 1.0mm coating thickness. Allow for processing losses, over-spray, etc – typically 10% or greater depending on surface and ambient conditions.

Packaging

GCP CHEMSPRAY™ 790LP Polyamine – 18.5kg drums

GCP CHEMSPRAY™ 790LP Isocyanate – 20kg drums

Product Risk

GCP CHEMSPRAY™ 790LP system is not intended for use by other than experienced operators. The data herein requires experience and knowledge to attain correct interpretation and outcome. The user must undertake all relevant tests to determine the suitability for the intended application, as such determination of fitness of purpose for product use is the sole responsibility of the purchaser.

Clean-up

Clean up liquid leakage or spills before hardening occurs using solvents such as MULTITEK™ Xylene, MEK or acetone.

Storage

GCP CHEMSPRAY™ 790LP polyamine and isocyanate components should be stored between 15 °C and 25 °C. Drums must remain tightly sealed against moisture ingress. Under these storage conditions these materials will have a shelf life of 6 months. Storage at temperatures other than detailed can result in degradation and crystallisation in the drum, rendering the materials unusable. Ingress of humidity or water into the drums during storage or use will also make the materials unusable.

Handling

Refer to GCP CHEMSPRAY™ 790LP Material Safety Data Sheet (MSDS).

Operators must have full awareness of the material safety requirements before any work is undertaken.

GCP CHEMSPRAY™ 790LP polyamine component is a mild irritant. Avoid contact with skin or eyes.

GCP CHEMSPRAY™ 790LP isocyanate component contains methylenebisphenyl diisocyanate (MDI). It is an irritant and allergic sensitizer to skin and respiratory systems. Avoid contact with skin or eyes. Avoid breathing vapour or spray aerosol.

GCP CHEMSPRAY™ 790LP system spray application must occur in areas with adequate ventilation. Suitable organic vapour respirators or air fed hoods must be worn during spray operations. Other required PPE includes butyl or nitrile gloves, safety goggles or full- face shield, coveralls and chemicalresistant safety boots.

Health and Safety

In case of spills and accidents, refer to the MSDS of the products or when in doubt contact your local GCP representative.

Always wear protective clothing, gloves and protective goggles when handling chemical products.

For full information, consult the relevant MSDS.

Project Specification

GCP offers a comprehensive package of quality and proven systems to meet different project and application needs. Contact your local GCP representative for further information.

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Limitations

Information contained in this document does not cover all possible application scenarios or imply product suitability for an application. Please contact your local GCP representative or the GCP Technical Department for further information.

Warranties

GCP and contractors recognised by GCP as experienced in the application of GCP products will provide warranties for individual projects. Warranty periods offered are dependent on project details and complexity. Requests for very long warranty periods may necessitate increased membrane thicknesses to ensure longevity. Contact your local GCP representative for further details.

Release Date: 02/11/18. The information contained in this product data sheet supersedes all previous versions.

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