Durafloor® X

Technical Data Sheet

Heavy duty polyurethane resin floor system

Uses

Durafloor X has been designed to produce a flooring system for applications that require high resistance to mechanical stress and chemical attack, that are subject to extreme temperatures and need to be applied within a limited timeframe. Typical uses for the system are in wet processing zones in chemical processing plants and food preparation and manufacturing areas.

Advantages

- Handles extreme temperatures
- High chemical resistance
- Hard wearing – abrasion resistant
- Non tainting during application
- Low odour during application
- Slip resistant
- Fast turnaround times
- Easy to clean
- Anti-microbial properties

Description

Durafloor X produces a topping and coating system with a textured finish, which provides a hard-wearing, chemically resistant floor that can handle extreme temperatures. The system also has anti-microbial properties which reduce the growth of bacteria and mould.

Design Criteria

The Durafloor X system consists of a topping, a slip-resistant aggregate and a top coat. The topping is designed to be applied at three different thicknesses. The depth of the topping is determined by physical site parameters and the degree of temperature resistance required by the floor (see properties table for temperature resistance).

Specification Clause

Flow-applied polyurethane floor topping

The designated floor areas shall be surfaced with Durafloor X, a (nominate thickness) mm thick flow applied polyurethane cement floor topping. The topping shall achieve a compressive strength of 50MPa and a flexural strength of 20 MPa. At 20°C, it shall be capable of accepting foot traffic at 24 hours and vehicular traffic at 48 hours.

Properties

The following results were obtained in controlled laboratory conditions at 20°C and 50% relative humidity.

Bond Strength:	Greater than cohesive strength of 25MPa concrete. >1.5 MPa
Compressive Strength:	> 50 MPa
Flexural Strength:	20 MPa
Temperature Resistance:	3 - 4 mm system: -5°C to 65°C 5 - 6 mm system: -5°C to 90°C 8 - 9 mm system: -25°C to 120°C
Chemical Resistance:	Good resistance to sugars and most organic and inorganic acids. Please check resistance to required chemicals with your local Parchem sales office
Slip Resistance Test:	AS/NZS 4586:2013 Appendix A (wet pendulum test) System: 5 - 6mm Mean BPN: 59 Class: P5

Note: The Slip rest results shown are available on request. Reasonable variations are to be expected on site due to site-specific conditions and variances with application. Application of the proposed system on a small test area on site, prior to commencement of works is highly recommended to confirm actual slip resistance.

Application Instructions

Durafloor X should only be applied by specialist contractors, recognised by Parchem who have been trained in the correct installation procedures.

Preparation

Durafloor X should be applied within the temperature range of 10-30°C. Refer to Parchem for advice on application outside of this temperature range.

Concrete substrate should be a minimum strength of 25MPa, free from coatings and other contaminants. The substrate should be dry to less than 95% relative humidity, have an effective damp-proof membrane installed and be free from rising damp and ground water pressure. Concrete should ideally be 28 days old, however Durafloor X may be applied to concrete as early as 7 days old providing high strength concrete is being used and the curing / drying conditions are suitable. Please contact Parchem for advice under these conditions.

All cementitious laitance to be removed to expose sound concrete beneath and provide a clean, dry, dust free, open-textured surface via totally enclosed shot blasting and/or scarification. Floor areas beneath air-conditioning units, ducting etc. and around perimeter should be prepared using hand held

preparation equipment. Any damaged areas must be made good with a suitable epoxy repair mortar. Contact Parchem for advice. Any rough or uneven areas to be smoothed with an epoxy scratch coat, of Nitomortar 903 with Nitomortar F4 fillers.

All joints in the substrate must be expressed through Durafloor X.

Anchorage groove details

Anchorage grooves must be formed in the concrete substrate along all free-edges, bay joints, drains, at doorways, around columns and machine plinths, etc and at regular centres across the floor. These anchorage grooves are formed using a diamond cutting wheel and must be 6mm wide with a minimum depth equal to the topping thickness (3-7mm).

It is essential anchorage grooves are correctly placed to aid in the distribution of mechanical stress from temperature changes and shrinkage.

Priming

A primer is generally not required but may be required on very porous substrates, please contact your local Parchem sales office for advice. If required, Durafloor X Top Coat is the recommended primer. Apply the Durafloor X Top Coat by squeegee and roller (see Top coat - application).

The primer must be allowed to become tack free before applying the Durafloor X system.

Topping - mixing

Pack components are pre-weighed for optimum performance. It is essential that mix ratios are maintained - never split or proportion packs.

Mix the Base A in a clean mixing container using a heavy duty slow speed drill and helical mixer head for 20 seconds, taking care not to entrain air.

Agitate the pigment pack in its individual container. Add to the Base A and mix for 20 seconds. Add the Hardener B into the mixture and mix for additional 20 seconds, taking care not to entrain air.

Add the Filler C, Pigment and mix for a minimum 2 minutes until the mixture is uniform using a heavy duty mixer fitted with a helical mixer head.

For 8 - 9mm thick system, and additonal 5kg of 1 - 2mm graded sand is added at the same time as adding Part C.

Topping - application

Please note this material has a pot life of approximately 15 minutes at 25°C.

Immediately after mixing, spread the Durafloor X topping using a notched squeegee or gauging rake followed by a steel trowel to spread it onto the primed floor, to the required thickness.

Immediately, roll with a spiked roller to release any entrapped air. Do not roll the surface after 5 minutes after application, dependent on temperature. Late spike rolling will cause surface texture.

Apply 0.7 – 1.2mm aggregate scatter immediately after the application of the Durafloor X Topping, and broadcast into the wet resin. Immediately after applying and spike rolling the Durafloor X topping.

Allow to cure. Typically a minimum of 5 hours @ 25°C.

Top coat - preparation

Fully remove any loose aggregate by vacuum and sweeping prior to application of top coat.

Top coat - mixing

Pack components are pre-weighed for optimum performance. Do not split or proportion packs.

Stir Durafloor X Top Coat Part A to redisperse any settlement.

Pour into a suitable large container and add the Durafloor X Top Coat Part C while mixing with a suitable mixer. Add the Durafloor X Pigment and continue to mix until a uniform colour is achieved. Add Durafloor X Top Coat Part B and mix for a further 2 minutes.

Top coat - application

Please note this material has a pot life of approximately 10 minutes at 25°C.

Immediately after mixing, apply the Durafloor X Top Coat by squeegee and roller to fully seal the surface. Ensure the coating is applied evenly taking care that the slip resistant aggregate is exposed, avoid overfilling the aggregate.

Durafloor X Top Coat has a short pot life - do not apply the product out of a roller tray.

Coving

Coving can be formed with a mortar produced from Durafloor Nitomortar 903 and fillers. Vertical surfaces must be primed with unfilled Nitomortar 903. Whilst the primer is wet or tacky, form the required cove using Nitomortar 903 with the required amount of fillers. Allow to cure. Lightly sand the surface to remove any roughness and apply a coat of Durafloor X Top Coat by brush/roller. Allow to cure.

Trafficking

Allow to cure for 24 hours at a minimum of 20°C before light trafficking.

Cleaning

All tools and equipment should be cleaned immediately after use with Solvent 10. Hardened material can only be removed mechanically.

Maintenance

Clean regularly using a single or double headed rotary scrubber drier in conjunction with a mildly alkaline detergent. For more information contact Parchem.

Durafloor® X

Coverage

	System Thickness		
	3-4 mm System	**5-6 mm System**	**8-9 mm System**
Durafloor X Topping			
Pack size	17.82kg	17.82kg	22.82kg (with additional 5kg 1-2mm sand)
Approx. Application Rate	5.4 kg/m²	7.2 kg/m²	13.3 kg/m²
	3.3m² per kit	2.5m² per kit	1.7m² per kit
Durafloor X Pigment Paste	180 g per kit	180 g per kit	180 g per kit
Slip Resistant Aggregate			
Clean dry Quartz sand 16/30 (0.5mm - 1mm)	3-4 kg/m²	3-4 kg/m²	3-4 kg/m²
Durafloor X Top Coat			
Pack size	4.83 kg kit	4.83 kg kit	4.83 kg kit
Approx. Application Rate	0.75 kg/m²	0.75 kg/m²	0.75 kg/m²
	6.6m² per kit	6.6m² per kit	6.6m² per kit
Durafloor X Pigment Paste	180 g per kit	180 g per kit	180 g per kit

Curing Times

	@10°C	@20°C	@30°C
Light traffic:	36 hrs	24 hrs	12 hrs
Full traffic:	72 hrs	48 hrs	24 hrs
Full chemical cure:	12 days	7 days	5 days

Supply

405850	Durafloor X Topping Part A	2.88kg
405851	Durafloor X Topping Part B	3.0kg
405853	Durafloor X Topping Part C	11.94kg
405854	Durafloor X Top Coat Part A	4.83kg pack
405855	Durafloor X Top Coat Part B	
405856	Durafloor X Top Coat Part C	
various	Durafloor X Pigment Paste	180g

Limitations

Note: To ensure a uniform colour, use only components with identical batch numbers in the one application area or contact Parchem for advice.

Durafloor X is designed as an industrial flooring product and is not colour fast and may change colour over time (exhibit a yellowing effect). Colour change depends on the UV light and heat levels present and hence the rate of change cannot be predicted. This is more noticeable in light colours and blues, but does not compromise the product's perfomance or chemical resistance.

Storage

12 months if kept in a dry store in original, unopened packs.

Storage Conditions

Store in cool, dry conditions, away from sources of heat and naked flames, in original, unopened packs. Storage temperature between 5 and 30°C. If stored at high temperatures and/or high humidity conditions the shelf life may be reduced.

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.

DURAFLOOR
INDUSTRIAL FLOORING SYSTEMS

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