

Duratop 460 SL

Duratop 460 SL is a multi-component, single layer, seamless, self-levelling polyurethane mortar for the protection of floors subject to high levels of traffic, impact and abrasion. It has a smooth matt finish possessing a wide spectrum of chemical resistance. Its dense and impervious nature provides the ideal floor finish for applications in the food, pharmaceutical and manufacturing industries. Urethane-concrete floors are extremely tough while enhanced flexibility provides excellent impact resistance and reduces the risk of cracking due to substrate movement. It can also withstand direct steam impact and high temperatures.

Colours:

Standard colours: Yellow, Grey, Red, Green and Cream

Special colours: On request depending on volume.

Some yellowing will occur in areas of UV exposure.

PRODUCT USES

Duratop 460 SL is used as the flooring material of choice in:

- Meat, fish and poultry processing,
- Food and beverage production
- Dairies, cheese and milk products
- Breweries and wineries
- Pharmaceutical production and
- Chemical plants.

It is the most suitable material for flooring around high heat sources, in chemical spill areas, wash areas and offloading areas, providing moisture resistance, abrasion resistance, impact resistance and ease of cleaning.

Duratop 460 SL polyurethane concrete should be applied at 4 to 6mm thick, depending on the service and cleaning temperatures expected, as well as the severity of the traffic expected.

ADVANTAGES

- Hard-wearing
- Long lasting
- Smooth finish (non-slip)
- Water washable surface
- Easy application
- Solid Colour
- High resistance to stains and chemicals
- Easy to maintain
- Noncracking
- Variety of colours

COVERAGE

As porosity and texture of concrete floors vary considerably, it is not possible to quote accurate coverage rates, but the following will provide a guide:

Theoretical requirement for 4mm film thickness: 8 kg per m²
Theoretical requirement for 6mm film thickness: 12 kg per m²

PRODUCT CHARACTERISTICS

FEATURES

Thermal stability
 Solvent free
 Low odour
 Priming or sealing of substrate
 Fast cure

 Steam/Hot water washable
 Chemical resistance
 Unaffected by freeze/thaw cycles
 Wide in-service temperature range
 Impact resistance
 High bond strength
 Abrasion resistant

BENEFITS

limited bacterial; growth on cracks
 ease of application, no VOC
 environment-friendly, use in confined areas
 single application, priming may not be required- substrate dependent
 limited downtime, trafficable after 12 hours, forklifts after 24 hours
 ease of maintenance, hygienic
 resists organic and inorganic acids, bases and salts
 resists cracking due to thermal cycling
 stable from -40°C to +80°C
 remains undamaged in offloading areas
 adheres to most substrates with limited preparation
 suitable for high traffic and forklift areas

SURFACE PREPARATION

- Concrete shall be clean, structurally sound and free from foreign materials, contaminants, oily products and other debris.
- Concrete surfaces shall be 'visibly dry' with no standing water. The minimum tensile (pull-off) strength shall be 1.5N/mm² and concrete shall have cured for at least 5 days.
- Concrete substrates shall incorporate a continuous waterproofing membrane.
- Concrete design shall allow provisions for movement expansion joints, as required. In addition, provision shall be made for induced/anchor joints to allow any shrinkage of the concrete to occur along defined planes.
- All laitance shall be removed.
- All imperfections such as holes and cracks shall be repaired and leveled with the mean level of the surface.
- For repairing surface unevenness, Optima's Durafix concrete repair systems shall be used.
- The whole surface shall be prepared mechanically using abrasive shot blasting or scarifying equipment to remove surface laitance and achieve a profiled open textured surface.
- All high spots shall be removed.
- Remove all dust, loose or friable material preferably by industrial vacuum.
- Prime throughout with a solvent-free epoxy primer such as Duratop DPM or Duratop SF Primer, fully blinding with 20% dry aggregate with an average diameter of 400-800 microns.
- Remove any loose aggregate by brush or vacuum.

Note: Each particular floor needs to be evaluated to determine the degree of preparation required. For example, certain power floated floors may not require priming. Others may need to be pre-levelled to provide a fall towards drains etc. All porous floors require priming to prevent blisters forming in the Duratop 460 SL.

APPLICATION DETAILS

Application Conditions: Application temperature should be between 10°C and 25°C. Employ the use of localized cooling or heating equipment if necessary. Try avoiding applying over hot surfaces or previously heated areas. Substrates must have a moisture content of 8% maximum and tensile strength of 1.5 N/mm² minimum

Surface Preparation: Surfaces need to be cleaned and flattened, or imperfections will show through flow applied applications. Light grinding to remove all surface defects is recommended. Scabbling and acid etching is not recommended. If the substrate is porous or there is expected to be pin hole issues or moisture concerns, a scraper coat of DURATOP PU PRIMER is recommended as a primer. Anchor grooves are to be cut at twice the thickness of the floor finish to a maximum of 10mm. Anchor grooves are to be cut around the floor perimeter, parallel to expansion joints, around upright structures, around drains, parallel to door thresholds, and at regular 3 meter spacing across the floor surface.

Priming: Even though DURATOP 460 SL is resin rich, it will require a primer on surfaces that are already sound and of suitable specification. If moisture or porosity is a concern, prime with DURATOP PU PRIMER at 500 µm thickness using a trowel and allow to cure for 12 hours. If no blistering or pin holing occurs, and all has set hard, continue with the final screed topping.

Application: Shake well the resin component to resuspend all the pigments in the liquid. In a pot mixer, premix the resin and the hardener until mixed together. While mixing, add in the powder aggregate gradually until all wetted out and lump free. Then transfer the mix onto the primed surface and level to the required thickness using a steel trowel. Once level, use a spike roller to remove stubborn trowel lines and re-aerate the screed. Do not spike roll beyond initial set (3-5 minutes of application) or the screed will not self-level and roll marks will remain in the screed. Ensure that anchor grooves are filled completely. Allow the screed to cure for 12 hours. Protect the curing floor from damp, condensation and direct water for at least 24 hours.

Limitations: Do not apply in humidity is expected to be greater than 90% RH, or if the surface temperature is less than 3°C above the dew point. Ensure that the curing temperature never drops below 5°C, and do not apply over concrete that is less than 25 MPa compressive strength.

WATCH POINTS

DURATOP 460 SL will discolor in direct sunlight or outdoor settings.

It is recommended that the Duratop 460 SL floor is coated with Duratop 460 PU Seal to prevent premature discoloring and to seal "wet areas".

Mix only enough to allow placement during the pot-life of the product. Discard setting product.

Colour may take 2 to 3 days to settle.

While a primer is not required, it will always give a more solid appearance if used.

STORAGE

Store indoors at temperatures of 5 – 35°C and humidity below 80% R.H.

CLEANING

All tools and equipment should be cleaned with thinners or Xylene immediately after use. If delayed, the equipment will need mechanical action to clean or be discarded.

SAFETY PRECAUTIONS

- Wear gloves and eye protection during mixing and application.
- For the full health and safety hazard information and how to safely handle and use this product, please make sure that you obtain a copy of the Optima Coatings Material Safety Data Sheet (MSDS)) for each component of Duratop 460 PU from our office or the Technical Consultant.
- Skin contact: Wash thoroughly with soap and water.
- Eye contact: Flush immediately with water for 10 – 15 minutes and contact a physician.
- Respiratory problems: Remove affected person to fresh air immediately and contact a physician.
- Not for internal consumption.

TECHNICAL DATA

Correctly mixed and applied product can achieve the following specifications:

Yield	12 Liters per kit
Coverage	3m ² at 4mm
Appearance	Smooth surface
Application Temp	10°C to 25 °C
Screed Thickness	3 - 4 mm
Pot Life	15 minutes
Time to Foot Traffic	12 hours
Time to Wheel Traffic	24 hours
Full Cure: 7 days	7 Days

Compressive strength:	55MPa (7978psi)	ASTM C579
Tensile strength:	9 MPa (1305psi)	ASTM C307
Flexural strength:	21 M Pa(3046psi)	ASTM C580
Surface hardness:	80-90 Shore D	ASTM D2240
Taber abrasion resistance:	120mg loss(1kg load, 1000 cycles)	ASTM D4060
Surface spread of flame:	Class 2	
Thermal conductivity:	0.9 W/mK	ASTM C177
Water absorption:	0	ASTM C413
Adhesive strength:	2.8MPa (400psi)	ASTM D4541

TEMPERATURE RESISTANCE

Service temperature:	Minimum: -40°C
	Maximum: 60°C for a 4mm application
	80°C for a 6mm application

CHEMICAL RESISTANCE

No physical damage from temporary exposure to mustard, ketchup, lactic acid, vinegar and lemon juice. No physical damage from 24-hour immersion testing in:

- 10% acetic acid
- 30% nitric acid
- 50% sodium hydroxide
- 30% sulphuric acid
- Xylene

RECOMMENDED PRIMERS AND TOPCOATS AND SEALER COATS

Primer: Duratop DPM Primer, Duratop PU Primer

Topcoat: Duratop 460 PU Kote

PACKAGING DATA

Supplied in 3.0LT RESIN, 2.2LT HARDENER and 16KG AGGREGATE.

Technical details above are provided in good faith. We are an ISO 9001: 2008 registered company and our products are manufactured to the highest standards using raw materials of superior quality. Consequently we believe in the quality of our products and will willingly replace any product in the unlikely event of a quality related performance failure. Whilst we are confident in guaranteeing the quality of our products, we cannot however accept any liability for performance failure due to the incorrect application of our products. Correct application is critical to the successful performance of our products and as this process falls outside of our control we are unable to cover the application under our product performance warranty. Where there are doubts, it is recommended that the user conduct their own suitability tests before use. To retain sheen and colour consistency of your paint, always make sure that the batch numbers are the same on all paint containers that you purchase.

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