DURATOP 460 PU

PRODUCT DESCRIPTION

Duratop 460 PU is a multi-component, single layer, seamless, trowelable polyurethane mortar for the protection of concrete floors subject to high levels of traffic, impact and abrasion. It has a textured matt finish possessing a wide spectrum of chemical resistance. 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.

COLOURS: Standard colours: black, grey, red, green and cream
Special colours on request.

PRODUCT USES

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

- Meat, fish and poultry processing,
- Food and beverage production
- Dairies, cheese and milk products
- Cold rooms, chillers and freezers
- 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 permeability, abrasion resistance, impact resistance and cleaning properties.

It may be used where high rates of moisture transmission are required or where residual moisture exists, such that the use of non-breathing, moisture-sensitive or impervious flooring systems cannot be used.

Duratop 460 PU polyurethane concrete should be applied 6 to 9mm thick, depending on the service and cleaning temperatures expected, as well as the severity of the traffic expected.

ADVANTAGES

- Expert application- Installed only by trained and approved specialist contractors.
- Fast application/rapid access- Can be applied to 6-day old concrete or 2 day old polymer screeds.
- Short curing time and 12 hour access to foot traffic; 24 hours for vehicles.
- Hygienic/Safe- Slip resistant, non-tainting, non-dusting, monolithic (minimum joints), easy to maintain, microbiologically inert.
- Durable/long life- Wide chemical resistance, wear and impact resistance, resists temperatures from -40^{0}C to 120^{0}C at 9mm thickness.
- Pre-packed and pre-weighed for immediate use; batch-to-batch colour matched for consistency.

- New or old floors can be treated.

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 6mm film thickness: 12 kg per m^2

Theoretical requirement for 9mm film thickness: 18 kg per m^2

PRODUCT CHARACTERISTICS

FEATURES	BENEFITS
Thermal stability	limited bacterial; growth on cracks
Solvent free	ease of application, no VOC
Low odour	environment-friendly, use in confined areas
Priming or sealing of substrate	single application priming may not be required substrate dependent
Fast cure	limited downtime, trafficable after 12 hours, forklifts after 24 hours
Slip resistant	safety
Steam/Hot water washable	ease of maintenance, hygenic
Chemical resistance	resists organic and inorganic acids, bases and salts
Unaffected by freeze/thaw cycles	resists cracking due to thermal cycling
Wide in-service temperature range	stable from -40^0C to $+120^0$C
Impact resistance	remains undamaged in offloading areas
High bond strength	adheres to most substrates with limited preparation
Abrasion resistant	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/mm^2 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® 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 PU.

APPLICATION DETAILS

1. Kit details

Pack size:	30.83kg
Recommended application thickness:	6-9mm
Applied density:	2kg/m^3
Theoretical requirement for 6mm film thickness:	12 kg per m^2
Theoretical requirement for 9mm film thickness:	18 kg per m^2
Recommended material temperatures:	minimum +10^{0}C, maximum +25^{0}C
Recommended substrate temperatures:	minimum +10^{0}C, maximum +35^{0}C (Cure time is temperature, humidity and film thickness dependent.)
Light traffic after:	12 hours
Full traffic after:	24hours
Full cure after:	2-3 days

2. Application method

- Add liquid Part A and pigment paste Part C together in a 30L pan mixer. Add liquid Part B, start timer and mix for 45-60 seconds until a homogeneous colour is reached.
- Add dry ingredients and mix for a further 3-4 minutes. Effective mixing improves flowability and extends working time.
- Spread out with a notched trowel and spike roll using a sharp pointed spike roller
- Trowel smooth if required. Total working time from start of timer to completion of application is a maximum of 20 – 25 minutes temperature dependent.
- Smooth with a lightly solvent-wetted roller if a less textured surface is desired.
- Ensure that the application ends at one of the expansion joints. If more than one kit is required for a panel, these must be mixed within a 10 minute cycle time to ensure that shore lines are not evident.

TECHNICAL DATA

Correctly mixed and applied product can achieve the following specifications:

Compressive strength:	50MPa (7250psi)	ASTM C579
Tensile strength:	5.5MPa(800psi)	ASTM C307
Flexural strength:	12.5MPa(1820psi)	ASTM C580
Surface hardness:	80-90 Shore D	ASTM D2240
Impact resistance:	160 in.lb	ASTM D2794
Taber abrasion resistance:	5mg loss(1kg load, 1000 cycles)	ASTM D4060
Thermal conductivity:	1.2 W/mK	ASTM C177
Water absorption:	<0.1%	ASTM C413
Adhesive strength:	2.8MPa (400psi)	ASTM D4541

TEMPERATURE RESISTANCE

Service temperature:	Minimum: -40^{0}C
	Maximum: 80^{0}C

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

STORAGE CONDITIONS

Store indoors at temperatures of 5 – 35^{0}C and humidity below 80% R.H.

SHELF LIFE

Correctly stored product will last a minimum of:

Part A (polyol):	2 years
Part B (isocyanate):	1 year
Dry ingredients:	6 months unopened (must be protected from moisture)

IMPORTANT

- A retaining/anchor groove must be placed at exposed edges along the application area (perimeter, joints, columns, covings and drains or gullies) to prevent curling during curing. Width and depth must be twice the thickness of the floor finish.
- Do not apply on substrates where significant vapour pressure may occur.
- Freshly applied **Duratop 460 PU** must be protected from damp, condensation and water for at least 24 hours.

- A subsequent topcoat if required should be applied after a minimum of 24 hours and preferably before 48 hours.

PACKAGING DATA

30.83Kg pack: Preweighed liquid Parts A (2.67Kg) and B (2.86Kg)
Pigment: 0.5 Kg
Aggregate/cement mixture: 24.8Kg

Kit provides a minimum of 10 litres of mixed product covering 2.5m^2 with 4mm of flooring.

AUXILLARY PRODUCTS

Duratop 460 C - a non-slumping urethane concrete product for coving applications.

Duratop 460 CP - a 2K urethane primer which provides a tacky surface to aid vertical application of the coving product Duratop 460C.

Duratop 460 SL - a denser, self-leveling, impervious material for application in 4-6mm screeds.

Technical details above are provided in good faith. We are an ISO 9001 2000 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 users conduct their own suitability tests before use.

MANUFACTURED BY : ZEST POLYURETHANES AT DURAM (PTY) LTD