

1.0 Description:

- Two components coal tar epoxy formulated to give a high elasticity.
- Good durability against abrasion and high resistant to sewage water.
- Doesn't need priming.

2.0 Uses:

- Anti rust coat for iron works, cast iron, steel,
- Protective coat for concrete pipes and sewage structures for both internal and external surfaces.
- Water proofing and wearing coat for floors of garages, ramps, loading decks, industrial floors and bridge decks.
- Isolating outside structure under earth to protect concrete from carbonation.

3.0 Approval & Certification:

Pull off to concrete	: ASTM D7234
Pull off to Steel	: ASTM D4541
Abrasion Resistance	: ASTM D4060
Chemical Resistance	: ES 3303

4.0 Colours:

Black in color.

5.0 Product Data:

Solid Content	: 88	%±2	
Density of R+H	: 1.3	gm/ml	
Pull off to concrete	: > 1.9	N/mm ²	failure mode A
Pull off to Steel	: 3.28	N/mm ²	
Abrasion test wheel CS17	: 0.0592	gm	
Abrasion test wheel CS10	: 0.0439	gm	

Notes:

- Above values are subjected to slight change depending on temperature.
- All above data is for the final mixed components.

6.0 Chemical Resistance:

<u>Chemicals</u>	<u>Time (days)</u>	<u>Result</u>
Sodium Hydroxide 20%	14	No effect
Sulfuric acid 10%	14	No effect
Acetic acid 20%	7	No effect
Gasoline	14	No effect

7.0 Film thickness per coat:

Wet Film Thickness	: 150 - 190	microns
Dry Film Thickness	: 130- 170	microns
Consumption (R+H)	: 200 - 250	gm/m ² /coat

8.0 Surface Preparation:

For Concrete Surface:

- Substrate shall be Reinforced concrete with dimension and steel reinforcement suitable for the expected loads.
- Stress shall not be less than 300 kg/cm² or according to project specification.
- Expansion & contraction joints shall be suitable to concrete slab dimensions and filled with the suitable joint sealant (recommended polyurethane 2 component).
- Application of Expansion & contraction joints shall be put into consideration to make sure that it complies with the proceeding self-levelling epoxy coat.
- Suitable trowelling should be taken into consideration because:
 - Delayed Trowelling will force addition of excess water that shall cause separation of that above weak layer of cement + water.
 - Early trowelling will cause irregularities to the surface.
 - Extra trowelling will cause extra smooth surface.
- If epoxy finishing is to be applied surface hardener, sprinkled cement shall not be applied while finishing the concrete surface, as it gives a smooth surface that reduces the adhesion of the epoxy layer to concrete and may cause separation.
- Curing concrete with water for minimum 7 days after casting.
- Deviation in levels of the concrete floor shall be within acceptable limits.

Preparation of Concrete Surface after curing:

- Substrate should be free of oil grease, dust, or any other dirt.
- Surface should be blasted using disc Grinder or similar equipment to increase the surface area for maximum adhesion of proceeding layers.
- All weak or separated layers in concrete should be removed.
- Repair damaged areas using Epoxy paste if below 0.5mm or Epichor1618 if above 0.5mm, if needed.

For Steel Surface:

- For old surfaces, remove weak layers or stains that can prevent or weaken coating adhesion.
- If hydrocarbon products, remove with an alkaline detergent. Don't use thinner or any other organic solvents.
- Agitate the surface to activate the cleaner and before it dries, wash the treated area using fresh water.
- If old primer exists, make sure that it is compatible and strong enough to accept the coming epoxy primer
- Remove all Soluble salts as they have negative impact on the coating systems performance, especially when immersed.
- Surface preparation and coating should start only after all metal finishing and degreasing of a specific area is complete.
- Make sure to finish all welding and hot works before application.
- After sanding, remove all residues of corrosion products and abrasive media
- Surfaces should be dry, clean and treated to epoxy coatings requirements.

9.0 Application Methods:

9.1 For Concrete floors:

9.1.1 For Smooth Finish:

EPASTE	: 200 - 400	gm/m ² /coat depends on substrate, if needed.
KELMAR 1 st coat	: 200 - 250	gm/m ² , 150 - 190 microns
KELMAR 2 nd coat	: 200 - 250	gm/m ² , 150 - 190 microns

1. Make sure that all above mentioned surface preparation has been accomplished.
2. Pasting the surface using 3 component epoxy paste EPASTE 2coats, if needed.
3. Sanding of Epoxy paste shall be accomplished using suitable machinery.
4. Substrate shall be cleaned using vacuum cleaner.
5. Add KELMAR resin to hardener in a suitable container and mix well.
6. Using a brush, woollen roller or airless spray gun apply KELMAR 1st coat within a period that should not exceed 60 min. after mixing.
7. Applying KELMAR 2nd coat after 24 hours.
8. Clean all Tools using thinner.

9.1.2 For Quartzite anti-slip Finish:

EPASTE	: 200 – 400	gm/m ² /coat depending on substrate, if needed.
KELMAR 1 st coat	: 175 – 250	gm/m ² , 135 – 190 microns
Anti-slip Quartzite	: 100 – 200	gm/m ²
KELMAR 2 nd coat	: 200 – 250	gm/m ² , 150 – 190 microns

1. Make sure that all above mentioned surface preparation is accomplished.
2. Pasting the surface using 3 component epoxy paste EPASTE, if needed.
3. Sanding of Epoxy paste shall be accomplished using suitable machinery after 24hours.
4. Substrate shall be cleaned using vacuum cleaner.
5. Applying first coat KELMAR.
6. Spray Quartz 0.7 – 1.0 mm with the mentioned rate.
7. Applying second coat KELMAR after 24 hours.
8. Clean all Tools using SOLVENT T.

9.1.3 For Quartzite extra rough finish for ramps:

KELMAR 1 st coat	: 200 – 250	gm/m ² , 150 – 190 microns
Anti-slip Quartzite	: 2.5 – 3.0	kg/m ²
KELMAR 2 nd coat	: 500 – 600	gm/m ² , 380 – 450 microns
KELMAR 3 rd coat	: 250 – 300	gm/m ² , 190 – 230 microns

1. Make sure that all above mentioned surface preparation has been accomplished.
2. Applying one coat primer epoxy EPICHOR 101P that completely penetrates the surface to increase the bond strength for coming layers.
3. Apply first coat coloured epoxy KELMAR.
4. Submerge the first applied coat on wet with quartz size 0.7 – 1.0 mm or as required.
5. On the second day remove extra quartz.
6. Apply 2 coats (coat/day) coloured epoxy paint KELMAR.
7. Clean all Tools using thinner.

9.2 For Steel Substrate:

KELMAR 1 st coat	: 150 - 200 gm/m ² , 110 - 150 microns
KELMAR 2 nd coat	: 150 - 200 gm/m ² , 110 - 150 microns

1. Make sure that all above mentioned surface preparation has been accomplished.
2. Substrate shall be prepared as previously mentioned.
3. Apply anti rust primer Recommended EPICHOR SP220.
4. After 24 hours add KELMAR resin to hardener in a suitable container and mix well.
5. Using a brush, woollen roller or airless spray gun apply KELMAR 1st coat within a period that should not exceed 60 min. after mixing.
6. Applying KELMAR 2nd coat after 24 hours.
7. Clean all Tools using thinner.

Notes:

- *Temperature of the substrate should be min 10°C.*
- *Good ventilation should be ensured.*
- *The coating shall not be exposed to any spillage or mechanical wear until fully cured.*

10.0 Product mixing Ration by weight:

Resin : Hardener	: 8.43 : 1.00	by weight
Total Weight	: 1, 5	Kg
Container	: Sealed pre weighed Steel Containers	

Notes:

- *The product components shall not be divided as total weight of each component shall be totally used.*
- *Slow Mechanical Mixing is recommended.*
- *Mixed components should be transferred to a third container and remixing should take place to reach ultimate results*

11.0 Pot life, Drying and curing time:

Initial Curing Time	: 24	hours at 24°C
Final Curing Time	: 7	days at 24°C
Pot Life	: 60	min. at 24°C
Walk on Time	: 48	hours at 24°C
Recoating	: Duration between the any two successive coats shall not exceed 1week otherwise, repriming should take place.	

12.0 Disclaimer:

- The information in this document is given to the best of our knowledge, based on laboratory testing and practical experience. We cannot guarantee anything but the above-mentioned quality of the products themselves. Minor product variations may be implemented to comply with local requirements. We reserve the right to change the given data without further notice. Users should always consult us for specific guidance on the general suitability of this product for their needs and specific application practices.
- Samples of any approved delivered materials shall be retested after delivery.
- These products are for professional use only. The applicators and operators shall be trained, experienced and have the capability and equipment to mix/stir and apply the coatings correctly and according to our technical documentation. Applicators and operators shall use appropriate personal protection equipment when using this product. This guideline is given based on the current knowledge of the product. Any suggested deviation to suit the site conditions shall be forwarded to our responsible representative for approval before commencing the work.

13.0 Handling of Epoxy Products:

- Avoid contact with eyes and skin. Emergency showers and eyewash stations should be readily accessible.
- Adhere to work practice rules established by government regulations.
- Use personal protective equipment.
- When using, do not eat, drink, or smoke.

14.0 Compatibility:

- Primers applied prior to specified product shall always be epoxy based products.
- Floor Repairing and fixing defects, product shall always be epoxy based products
- Wall repairing and smoothing surface a cement based, or epoxy-based products can be used.
- Recoating can be epoxy or polyurethanes products.

15.0 First aid Measures:

- General advice: Seek medical advice. If breathing has stopped or is laboured, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.
- Eye contact: Hold eyelids apart, initiate and maintain gentle and continuous irrigation until the patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour.
- Skin contact: Immediately remove contaminated clothing, and any extraneous chemical, if possible, to do so without delay. Initiate and maintain gentle and continuous irrigation.
- Take off contaminated clothing and shoes immediately.
- Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.
- Inhalation: Move to fresh air.

16.0 Storage:

- Store in steel containers, above ground, and surrounded by dikes to contain spills or leaks.
- Do not store in humid or extra hot weathering conditions.
- Keep containers tightly closed away from heat & in dry, cool, and well-ventilated place.
- Technical measures/Precautions:
- Do not store in reactive metal containers.