

I. General Description

POLYDO KPU-600 is a high performance, sprayed, plural-component pure polyurea elastomer exhibiting very high elongation. This system is based on amine-terminated polyether resins, amine chain extenders and prepolymers. It provides an extremely flexible, tough, resilient monolithic membrane with good water and chemical resistance.

II. Features

- ◆ 100% solids type, non-toxic and solvent free.
- ◆ Ultra fast set making applicable on the inclined or vertical surface without sagging and short down time.
- ◆ Non-catalyst, insensitive to water and temperature.
- ◆ Excellent physical properties such as chemical, impact, abrasion, cold, heat, water resistance and durability and UV resistance.
- ◆ It is easy to apply and easy to adjust color and no limitation in thickness control.
- ◆ High temperature stability up to 177°C (350°F).
- ◆ High elongation for crack bridging.
- ◆ Good adhesion strength with a variety of substrate.

III. Recommended uses

- ◆ Waterproof and anti-corrosive coating for buried concrete structure, sewerage pipe and manhole, etc.
- ◆ Anti-corrosive coating for steel beam & pipe, plate, silos and tanks.
- ◆ Floor coating for parking place, factory, warehouse and shopping center.
- ◆ Waterproof and anti-corrosive coating for marine structure, bridge piers and vessel deck.
- ◆ Lining for railcar and floor coating for truck.
- ◆ Reinforcement coating for the incline of road and waterproof and anti-corrosive coating for underground cave.
- ◆ Waterproof and anti-corrosive coating for chemical tank, swimming pool and nuclear power plant.
- ◆ Encapsulation material for EPS, polyurethane insulation foam or other types of flotation materials
- ◆ Encapsulation material for asbestos, lead paint or other dry hazardous materials.
- ◆ Production of artificial set for broadcasting and exhibition and modeling.

IV. Resin Properties

Items	KPU-600A	KPU-600B
Type	Isocyanate Prepolymer	Amine Mixture
Appearance	Yellowish Transparent Liquid	Pigmented Liquid
Viscosity(cps at 25°C)	600 - 1,500	400 - 1,000
Specific Gravity	1.0 - 1.2	0.9 - 1.1
Mixing Ratio(Volume)	1	1
Solids Content	100%	100%
Volatile Organic Compounds	0%	0%
Shelf Life at 15-32°C	6 months	12 months
Packing Unit	216 (kg/Drum)	200 (kg/Drum)

V. Curing Properties

Items	Results	Unit
Gel Time	20±10	seconds
Tack Free Time	50±10	seconds
Post Cure*	12	hours
Recoat	within 24	hours
Tensile Strength	over 150	kgf/cm ²
Elongation	500 - 700	% at 25°C
Tear Strength	over 70	kgf/cm
Hardness	75 - 85	Shore A

*Complete polymerization to achieve final strength can take up to several weeks, depending on a variety of conditions. The samples for tests were sprayed with a Gusmer H-3500 at 2,000 psi(13.79 Mpa) dynamic pressure. Primaries/Hose Heat 60°C (140°F) GX-7 Standard Gun, Module # 17, PCD # 213

VI. Color

Available in several standard colors. Custom colors quoted upon request.

It should be noted that **POLYDO KPU-600** is an aromatic polyurea; therefore, as with all aromatics over a period of time color change as well as superficial oxidation will occur.

Aliphatic urethane and other suitable topcoats can be used where long-term aesthetics are of critical importance.

VII. General Application Instructions

Apply **POLYDO KPU-600** to only clean, dry, sound surfaces free of loose particles or other foreign materials. A primer may be required, subject to type and/or

condition of the substrate. Consult technical service personnel for specific primer recommendations and substrate preparation procedures.

POLYDO KPU-600 can be sprayed over a broad range of ambient and substrate temperatures. The limitations are in the ability of the application equipment to provide adequate material pressure and heat. Contact technical service personnel for specific recommendations, pricing and availability of spray and auxiliary equipment.

It is recommended that **POLYDO KPU-600** be sprayed in multidirectional (north-south/east-west) passes to insure uniform thickness.

The amine "B" component must be thoroughly power mixed each day, prior to use. Contact an KUKDO technician regarding proper mixing equipment.

Follow the instructions attached to A and B containers.

VIII. Recommended Equipment Settings

- ♦ Standard 1:1 ratio, heated, plural component equipment developing a minimum of 1,500psi (10.34 Mpa) dynamic pressure with heating capabilities to 79°C (175°F) will adequately spray this product. These include GRACO-GUSMER H-3500, H-20_35 Pro, E-XP2. Gun models include Graco-Gusmer GX-7, GX-8, Fusion MP Gun.
- ♦ Pre-heater temperature should be at 70-75°C (158-167°F)
- ♦ Hose temperature should be at 60-70°C (140-158°F) a hose thermometer inserted under the insulation near the gun should read a minimum of 55-70°C (131-158°F)
- ♦ Physical properties will be enhanced when sprayed at higher pressure (2,500 psi or more) (17.24 Mpa), utilizing an impingement mix gun such as the Graco-Gusmer GX-7, GX-8, Fusion MP gun.

IX. Mixing and Thinning

Thinning is not required. Using any thinner may adversely affect product performance.

X. General Safety, toxicity & Healthy Data

Material Safety Data Sheets are available on this coating material. Any individual who may come in contact with

these products should read and understand the M.S.D.S.

WARNING: Contact with skin or inhalation of vapors may cause an allergic reaction. Avoid eye contact of the liquid or spray mist. Hypersensitive persons should wear protective clothes, gloves and use protective cream on face, hands and exposed areas.

CLEAN UP: Use Acetone, Toluene, MEK and Doeclean 10

CONTAMINATION: Avoid moisture contamination in containers. Containers should not be resealed if contamination is suspected, carbon dioxide created pressure can develop. Do not attempt to use contaminated material.

EYE PROTECTION: Safety glasses, goggles, or a face shield are recommended.

SKIN PROTECTION: Chemical resistant gloves are recommended. Cover as much of the exposed skin area as possible with appropriate clothing.

RESPIRATORY PROTECTION: Use a respirator approved for isocyanates and organic vapors. If you are not sure or not able to monitor levels, use MSHA/NIOSH approved supplied air respirator. Consider the application and environmental concentrations in deciding if additional protective measures are necessary.

INGESTION: Do not take internally. It is believed ingestion of polymeric isocyanates would not be fatal to humans, but may cause inflammation of mouth and stomach tissue.

XI. Delivery, Storage and Handling

- ♦ Deliver product in the manufacturer's original, new, unopened packages and containers, clearly marked with manufacturer's identification, printed instructions, lot numbers and shelf life expiration date for each component.
- ♦ Store materials not in use in tightly covered containers in a dry, well-ventilated area at an ambient temperature between 15-30°C (60-90°F), away from sunlight, heat, or other hazards.

XII. Limitations

- ◆ This product is for professional use only.
- ◆ Minimum material/container temperature for spray application is 20°C (68°F)
- ◆ Avoid moisture contamination in containers. Containers should not be resealed if contamination is suspected, CO₂ created pressure can develop. Do not attempt to use contaminated material.
- ◆ Read and observe all precautions, instructions, and limitations that are included with all containers of **POLYDO KPU-600**.
- ◆ Undried air exposed to liquid components will reduce physical properties of the cured coating.

NOTE: *The material supplied is two components (A & B) used to formulate this product. The quality and characteristics of the finished polymer is determined by the mixture and application of the two components.*

XIII. Warranty & Disclaimer

KUKDO Chemical Co., Ltd. has no role in the manufacture of the finished polymer other than to supply its two components. It is vital that the person applying this product understands the product and is fully trained and certified in the use of plural component equipment.

KUKDO Chemical Co., Ltd. warrants only that the two components of this product shall conform to the technical specifications published in the product literature.

The quality and fitness of the product is dependent upon the proper mixture and application of the components by the applicator. There are no warranties that extend beyond the description on the face of this instrument.

KUKDO Chemical Co., Ltd. **MAKES NO WARRANTY OF MERCHANTABILITY OF THE PRODUCT OR OF FITNESS OF THE PRODUCT FOR ANY PARTICULAR PURPOSE.**

KUKDO Chemical Co., Ltd. makes no warranty as to the quality of any product modified, supplemented, tinted, or altered in any way after it leaves the manufacturing plant.

KUKDO Chemical Co., Ltd. does not warrant that this product is suitable for use as a liner for potable water containers. Use of this product in a potable water container could be hazardous to health if it is improperly processed or applied.

The liability of KUKDO Chemical Co., Ltd. for any nonconformity of the product to its technical specifications shall be limited to replacement of the product.

The sole exclusive remedy of buyer, which is to have KUKDO Chemical Co., Ltd. replace any nonconforming product at no cost to buyer, is conditioned upon buyer notifying KUKDO Chemical Co., Ltd. or its distributor in writing of such defect within thirty days of the discovery of such defect.

KUKDO Chemical Co., Ltd. shall not be liable for any direct, incidental, or consequential damages resulting from any breach of warranty.

The data presented herein is not intended for non-professional applicators or those persons who do not purchase or utilize this product in the normal course of their business.

The potential user must perform any pertinent tests in order to determine the product's performance and suitability in the intended application, since final determination of fitness of the product for any particular use is the responsibility of the buyer.

The aforementioned data on this product is to be used as a guide and is subject to change without notice.

The information herein is believed to be reliable, but unknown risks may be present. No warranties, expressed or implied, including patent warranties or warranties of merchantability or fitness of use, are made by KUKDO Chemical Co., Ltd. with respect to products or information set forth herein. Nothing contained herein shall constitute permission or recommendation to practice any invention covered by a patent without a license from the owner of the patent.

Accordingly, the buyer assumes all risks whatsoever as to the use of these materials and buyer's exclusive remedy as to any breach of warranty, negligence, or other claim shall be limited to the purchase price of the materials. Failure to adhere to any recommended procedures shall relieve KUKDO Chemical Co., Ltd. of all liability with respect to the materials and the use thereof.

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