



Aditya Birla Chemical (Thailand) Co., Ltd. (Epoxy Division)

**EPOTEC YD 1535 G / TH 7257 G****EPOTEC Epoxy Adhesive System****YD 1535 G                      100    Pbw****TH 7257 G                      45     Pbw****Description**

EPOTEC YD 1535 G and TH 7257 G is Thixotropic epoxy adhesive system prefilled with glass fiber reinforcement. This system is suitable to provide working time more than 4 hrs @ 25 °C with low exothermic reaction even when it is used in thick sections of large components. This adhesive system is also capable to maintain thixotropy at higher working temperature, up to 45 °C and suitable to fill in wide gaps, up to 40 mm, without sagging.

The joints cured at room temperature provides excellent handling strength, the optimum properties, however, will only be reached after post curing at temperature of more than 40 °C. Fully cured composites prepared by this system are recommended to operate between - 60 to + 80 °C temperature.

**Processing**

This system can be processed between 15 - 50 °C and suitable for lay up process.

**Application**

This system is suitable for FRP, wood, mineral and metallic components.

**Typical properties of components**

Property	Unit	Resin YD 1535 G	Hardener TH 7257 G
Color	-	Light yellow	Light blue
Color of mix	-	Green	
Viscosity @ 25 °C	-	Paste	Paste
Density @ 25 °C	g/cm <sup>3</sup>	1.40 - 1.50	1.20 - 1.25
Cured density	g/cm <sup>3</sup>	1.3 - 1.4	

**Typical properties in the processing state and during curing**

Property	Unit	TH 7257 G
Hardener required for 100 gms of resin	By weight By volume	45 50
Pot life @ 50 °C @ 25 °C	Min.	300 220
Setting time @ 25 °C @ 40 °C @ 60 °C	Hrs.	24 - 48 10 - 12 4 - 5
Glass transition temperature 25 °C / 7 days 24 hrs / 25 °C + 4 hrs / 80 °C	°C	55 ± 2 80 ± 5

**Typical properties of cured system** (full cure @ 60 °C / 1.5 hrs. / 7 hrs)

Property	Test method	Unit	Valuefication
Tensile lab shear strength after partial curing @ 60 °C / 1.5 hrs. (green strength) a. GRE / GRE (cohesive failure) b. Steel / Steel	ISO 4587	MPa	5 - 10 5 - 10
Tensile lab shear strength a. GRE / GRE (cohesive failure) b. Aluminum / Aluminum c. Steel / Steel	ISO 4587	MPa	13 - 20 20 - 25 25 - 35
Tensile lab shear strength specimens after 1,000 hrs in demineralized water a. GRE / GRE (cohesive failure) b. Steel / Steel	ISO 4587	MPa	12 - 20 20 - 35
Tensile lab shear strength after 1,000 hrs @ 80 °C a. GRE / GRE (cohesive failure) b. Steel / Steel	ISO 4587	MPa	13 - 15 25 - 35
Tensile strength, steel / steel a. Unconditioned b. 1,000 hrs @ 80 °C	ASTM D2095	MPa	10,500 - 12,000
Tensile strength, steel / GRE / steel a. Unconditioned b. 1,000 hrs @ 80 °C c. 1,000 hrs in demineralized water	ASTM D2095	MPa	25 - 35 25 - 35 20 - 30
Bond strength by bending shear method, substrate; 4 mm steel plate	ISO 15108	MPa	12 - 18
Fracture toughness K1c G1c	ISO 13586	MPa√m KJ/m <sup>2</sup>	1.8 - 2.2 2,000 - 2,200
Heat distortion temperature (HDT)	OSO / R 75	°C	70 - 80
Sag resistance at 45 (80w*40h triangular bead)	ABC-ADC-002	mm	No slump No slide

**Surface preparation**

The surface must be clean and sound. Remove all dirt, laitance, grease and other foreign mater by cleaning with suitable solvent, sand blasting, mechanical abrasion, or acid etching. Remove water and dust from all surfaces with an oil free blast immediately prior to application.

**Mixing**

To obtain good results, thorough mixing of the ingredients is essential. Yellow color of resin and blue color of hardener turns in to green when homogeneous mixing takes place. Usually the resin and hardener are mixed in small lot as and when it is required. Manual mixing is possible, but electric dosing static mixer is more appropriate for homogeneous blending of resin and hardener.

**Application**

To ensure good adhesion to the substrates, it is recommended to apply rich layer of homogeneous blend uniformly on the surface and fill all the dents and pinholes. Adequate curing normally takes placed with in 24 hours, although full cure require post curing at temperature more than 40 °C.

**Cleaning and maintenance of equipments**

Tool and equipments are best cleaned immediately after use since removal of cured resin is difficult and time consuming. It is recommended that the bulk of the resin be removed using a scrapper and the remainder washed away using solvents such as toluene, xylene or acetone.

### **Storage and handling**

EPOTEC resin YD 1535 G and hardener TH 7257 G can be stored up to 1 year in sealed original container. Storage condition below 15 °C may cause crystallization of the resin as well as hardener. Crystallization may be reversed completely by heating the material to 50 - 60 °C. It is also advised to follow standard procedures for handling chemicals. Contact with skin and eye may cause irritation and prolong, repetitive contact with skin may cause dermatitis.

### **Disclaimer**

All recommendations for use of our products whether given by us in writing, verbally or to be implied from the results of tests carried out by us are based on the current state of our knowledge. Although, the information contained in this sheet is accurate, no liability can be accepted in respect of such information. We warrant only that our product will meet the designated specifications and make no other warranty either express or implied, including any warranty of merchantability or fitness for a particular purpose as the conditions of application are beyond our control.

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