



EPOTEC YD 535/ TH 7253-8

Description

EPOTEC YD 535 / TH 7253 -8 is an epoxy laminating system which consist one resin and a choice of six hardeners to provide wide range of processing properties and to suit most of the laminate fabrication techniques with varying environmental conditions. EPOTEC TH 7258 hardener of this system can provide working time

more than 10 hours at 25 °C with low exothermic reactions even when it is used in thick sections of large components. EPOTEC TH 7253 hardener has rapid curing character and can be used to produce small components that are demoldable in just a few hours at 25 °C. The low initial viscosity of this system guarantees fast and complete impregnation of reinforcing fibers such as glass, carbon, and polyaramide and allows laminates to be produced by contact pressure, vacuum or pressure bag techniques, filament windings, and vacuum assisted resin injection.

The laminates 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 components prepared by this system are recommended to operate between – 60 to + 80 °C temperature.

Processing

This system can be processed between 15 to 50 °C depending upon the choice of hardener and suitable for use in wet lay up lamination, resin transfer molding (RTM), resin infusion, pultrusion, filament winding, vacuum and pressure bag techniques, and contact pressure moldings.

Application

This system is suitable for very large range of applications including wind energy rotor blades, ships and boats, gliders, motor gliders & planes, recreational and sporting goods, molds and tools, automotive, electrical, and other industrial and house hold components.

Typical properties in the processing state and during curing

Property	Unit	TH 7253	TH 7254	TH 7255	TH 7256	TH 7257	TH 7258
Hardener required for 100 gms of resin	PBW	34 -36	34 -36	34 -36	34 -36	34 -36	34 -36
Pot life							
@ 20 °C	Min	10 -16	16 -25	30 -40	120-160	360-420	>12 Hrs
@ 25 °C	Min.	8 -14	14 -20	25 -35	80-100	280-330	>10 Hrs
Gel time @25 °C	Min.	9-15	15 -22	27 -38	85-120	330-390	>12 Hrs
1 mm thick film gel time							
@ 20 -25 °C	Hrs	1 -2	2 -2	4 -5	6 -7	10 -12	15 -20
@ 40 -45 °C	Hrs	30min	40min	50min	1 -2	3 -4	67
Curing Shrinkage	%	1.7	1.7	1.6	1.5	1.5	1.5
Glass transition temp. 25 °C/ 8 Days 24 hrs/25 °C+ 4 hrs/80 °C	°C °C	65 ± 5 85 ± 5	65 ± 5 85 ± 5	65 ± 5 85 ± 5	55 ± 2 80 ± 5	50 ± 2 80 ± 5	50 ± 2 80 ± 5

Typical properties of cured system (Curing at 25 °C/24hrs+60 °C/15hrs)

	Property	Unit	Value
1.	Tensile stress Elongation Modulus	MPa % MPa	60 4 -7 2,850
2.	Flexural stress Modulus	MPa Mpa	115 3,000
3.	Compression strength	MPa	120
4.	Shore hardener 'D'	-	80
5.	Heat distortion temperature (HDT)	°C	75 -85
6.	Water absorption 24 hrs/23 °C 7 days/23 °C	Mgs Mgs	15 Max. 40 Max.

Typical properties of cured glass fiber reinforced laminate

	Property	Unit	Value
1.	Tensile strength	MPa	440 Min.
2.	Flexural strength	MPa	480 Min.
3.	Compression strength	MPa	380 Min.
4.	Inter laminar shear strength	MPa	40 Min.
5.	Water absorption 24hrs/23 °C 7days/23 °C	% %	0.15 Max. 0.40 Max.

** Sheet of thick. 4 mm is prepared with triaxial E glass fabric of 1,200 gsm, and cured at 24hrs/23 °C + 15 hrs /60 °C

Storage and handling

EPOTEC resin YD 535 and hardeners TH 7253 -8 can be stored up to 1 years 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 advised to use resin and hardener only when they are clear and free from cloudiness. 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.