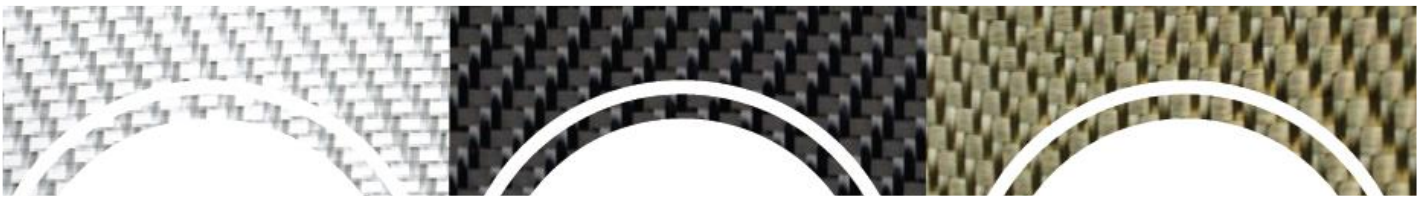


Corro-Wrap WL (Wet Lay-Up)

Rehabilitation and Strengthening System Based on Basalt Fibre, E-Glass, S-Glass and Carbon Fibre

Corro-Wrap Wet Lay-Up is composite system where the fibres using E-Glass, Carbon Fibre or Basalt Fibre are saturated with Corro-Dur resin and applied onto the substrate. Though it is a little tedious but economical compared to prepregs such as Corro-Wrap MC. Allows to choose various resin to suit the requirement of the repair such as high temperatures, high humid environment or when higher strength required. The majority of the Corro-Dur range being moisture and surface tolerant enables application on location where the presence of moisture becomes a hindrance in carrying out effective leak sealing or rehabilitation to use the product.

The Matrix

The Matrix, which is also known as the Resin is the agent that holds the fibre in place and allows the transfer of the load or pressure through the fibre reinforcement. We have diversified range of resins to suit the requirement.

- **Corro-Dur 192L**

Corro-Dur 192 L formulation has excellent tolerance to the dampness left in concrete steel after preparation for coating by high pressure water jetting. The formulation is solvent-free to avoid the objectionable odour and explosion hazards of epoxy solvents. Absence of solvents also assures compliance with all present and proposed air pollution regulations. Corro-Dur 192L is non-blushing and can be applied and will cure underwater.

- **Corro-Dur 199**

Similar to the Corro-Dur 192L, however, it is a Novolac system that has high chemical resistance against various chemicals such as Hydrochloric Acid, Sulphuric Acid, Caustic Soda and etc.

- **Corro-Chem 330 HHA**

It is a high temperature resistance system upto 125°C (continuously) and 149°C (intermittently). Corro-Chem 330 HHA also can be applied **Online without a Shutdown**.

- **Corro-Chem 333**

It is highly chemical resistant especially against aggressive chemicals like methanol.

The Fibres

The Fibre, provides the reinforcement like a rebar or gravel to concrete. The fibre strength differs based on the fibre orientation and we use the Uni-Directional and Biaxial weave.

- Basalt Fibre
- E-Glass
- S-Glass
- Carbon Fibre

MECHANICAL PROPERTIES OF COMPOSITE LAMINATE

DESCRIPTION	CRBX600 (E-GLASS)			BAS-RAP (BASALT-FIBRE)			CARBON FIBRE	CRS GLASS (S-GLASS)
Resin	CD192L	CD199	CC330HHA	CD192L	CD199	CC330HHA	CD192L	CD192L
Tensile Strength in hoop direction (MPa)	366	161	259	532	646	552	329	385
Tensile Strength in axial direction (MPa)	319	355	177	Not Applicable				
Tensile Modulus in hoop direction (MPa)	19105	15303	18320	28678	33669	89015	31774	17266
Tensile Modulus in axial direction (MPa)	21680	24637	13720	Not Applicable				
Poisson's Ratio	0.129	0.159	0.18	0.318	0.302	0.3	0.134	0.141
Thermal Expansion of Coefficient (mm/mm/°C)	-	-		32 x 10-5			-	-
Hardness (Barcol)	-	-		25	25	-	-	-
Lap Shear (MPa)	-	-		6.81	6.81	-	-	-
Thickness / ply (mm)	0.5	0.5		0.3	0.3	0.3	0.3	0.25
No of layers (minimum)	4	4		8	8	8	7	8

CRBX600 (E-Glass) - Biaxial Weave 0°/90°, Weight 640 g/m^2

Bas-Rap (Basalt Fibre) - Uni-Directional, Weight 300 g/m^2

Carbon Fibre - Biaxial Weave 0°/90°, Weight 300 g/m^2

CRS Glass (S-Glass) - Satin Weave 0°/90°, Weight 280 g/m^2

Technique Introduced - Vacuum Bagging Techniques:

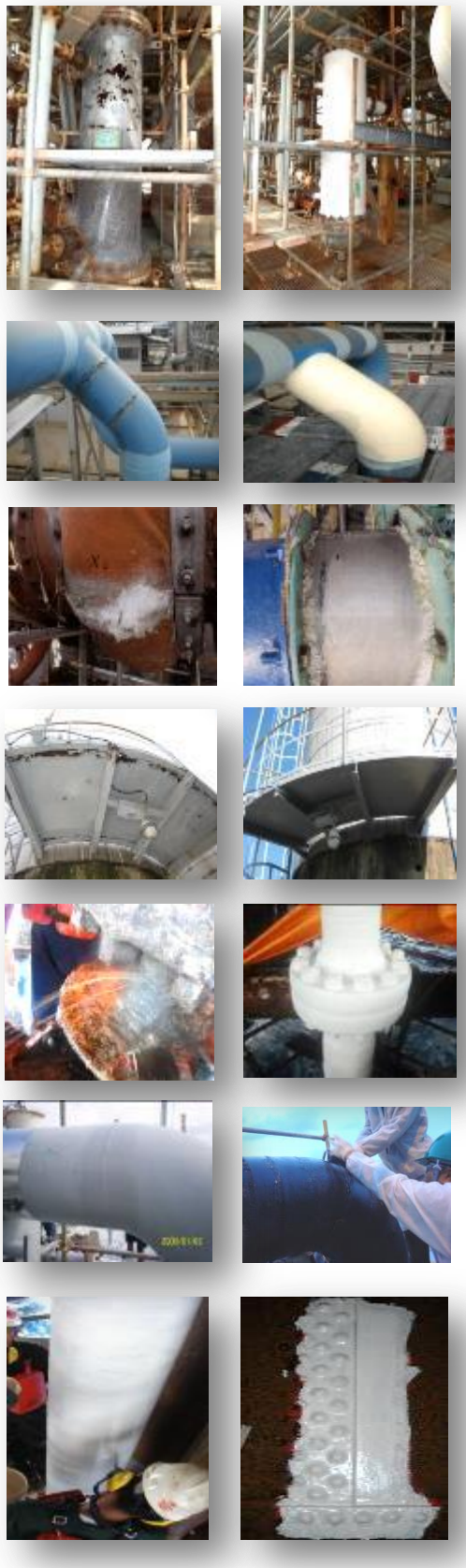
Used to compact the Corro-Wrap Wet Lay-Up application in order to remove air bubbles entrapped within the micro space of the composite laminate and also ensures appropriate resin to fibre ratio, providing top most physical properties thus reduces failure possibilities of the composite application.

TECHNICAL DATA OF RESIN / MATRIX				
RESIN	**CD192L**	**CD199**	**CC330HHA**	**CC333**
Temperature range	**80°C**	**80°C**	**125°C (continuous) 149°C (intermittent)**	**80°C**
Appearance	**Clear, Slight Amber**	**Clear, Slight Amber**	**Clear**	**Clear**
Base Resin	**Epoxy**			
Volume Solids	**100%**			
Mixing Ratio (by volume)	**5 : 3**	**5 : 3**	**1 : 1**	**2 : 1**
Specific Gravity	**1.16 (part A) 1.0 (part B)**	**1.2 (part A) 1.06 (part B)**	**1.5 (part A) 1.61 (part B)**	**1.5 (part A) 1.6 (part B)**
Viscosity	**25-35 poise**	**25-35 poise**	**-**	**-**
Pot Life @ 25°C	**40 minutes**	**45 minutes**	**40 minutes**	**25 minutes**
Curing @ 25°C (Touch Dry)	**4 hours**	**8 hours**	**8 hours**	**8 hours**
Curing @ 25°C (Full Service)	**3 – 24 hours**	**24 – 36 hours**	**12 hours to 5 days**	**12 hours to 5 days**
Packing	**2 US Gallons / kit**			
Advantages	**Standard system with high volume solids and solvent free. Basic chemical resistant against HCl and NaOH**	**High chemical resistant against HCl, H_2SO_4, NaOH**	**High temperature resistance and can be applied Online without a Shutdown**	**High chemical resistant against aggressive chemicals such as Methanol and etc**

The resin / matrix used herein formulated by Thin Film Technology, Inc and are totally non-hazardous. Classified as **Non-Regulated by USDOT, IATA and IMO** therefore safe for normal cargo transport and including air-freight.

Application fields:

- Rehabilitation of pipelines, pressure vessels, wastewater tanks
- High humid environment where presence of moisture become a hindrance,
- Rehabilitation of platform structures,
- Rehabilitation works in columns and beams,
- Strengthening of concrete elements due to changes in construction uses,
- Rectification of design or job constructions defects,
- Repair and rehabilitation of structures damaged by earthquakes,
- Restoration of bridges, chimneys, silos and outstanding concrete structures
- Rehabilitation of flanges, valves and weld-o-let,
- Rehabilitation of Weld Joint Fusion Loss
- Rehabilitation of different component pipes such as elbows, T-joints and etc
- Rehabilitation of caissons,
- Rehabilitation of tank roofs and tank bottom
- Rehabilitation of vent gas tower
- Rehabilitation of rivet tanks



Advantages:

- Moisture tolerant
- Calculated as per ISO24817 guidelines
- Mechanical Properties based on independent lab test carried out
- Economical compared to prepregs
- Custom / tailored to the environment or condition
- High chemicals resistance
- High temperature resistance
- Reduces production loss to the end user

Please contact us for more case histories and product related information at the contact number detailed below:-

Corroserv (M) Sdn Bhd
A25 1st Floor, Jalan IM 3/11,
Bandar Indera Mahkota,
25200 Kuantan, Pahang, Malaysia.
Tel : 609-5735623 Fax : 609-5735562
Email : admin@corroserv.com.my

Distributed by: