



WIPCOM

THE WESTERN INDIA PLYWOODS LIMITED

Technical Literature

Annexure No. III

WIPCOM - WIP's WOOD BASED LAMINATED PLASTIC FOR HIGH VOLTAGE APPLICATIONS

WIPCOM is primarily manufactured for high voltage applications in air or under oil.

Only high quality timber species are used for the manufacture of "WIPCOM". These species have the requisite fibre strength and porosity to absorb the required quantity of synthetic resin, which aids in compression and makes the finished product dimensionally stable and resistant to moisture.

Only certain portions of a tree are used for high voltage wood based plastic laminates in order to ensure that these are not contaminated with natural oils, gums, resins, etc.

Selected hardwood veneers are rotary cut and then vacuum pressure impregnated with Phenol Formaldehyde resin forming chemicals and alcohol. The impregnated media is practically neutral, i.e. neither acidic nor alkaline, in order to ensure a high degree of dielectric characteristics. Resin forming chemicals are polymerised to required stages in veneer pores and then finally set and stabilised under high pressure and temperature to get compact high-density wood based plastic laminates.

Features

WIPCOM is a high pressure laminate and is available only with specific gravities of 1.3 and above. It has excellent resistance to moisture, even on long term exposure.

WIPCOM has excellent dimensional stability even on long term immersion in water or subjection to high humidity.

WIPCOM is a unique industrial laminate, having not only commendable mechanical properties, but also excellent dielectric characteristics. The dielectric characteristics of WIPCOM are not dependent on insulating media like transformer oil, as it is a 100% solid insulating material.

PRODUCT IDENTIFICATION

WIPCOM designated by the symbol "WHV" manufactured in two types:

Type 1: This represents a laminate where all the laminations have grains in the same direction.

Type 2: This represents a laminate where succeeding laminations have their grain direc-

tion at right angles to the previous one.

The following nomenclature system is usually used for the identification of various grades of WIPCOM:

WIPCOM is denoted with the letters "WHV". This comes first in the series.

The grain direction is indicated soon after the word "WHV".

For example:

Grade WHV 1 represents a grade of WIPCOM which has the grain of all the laminations running parallel to each other.

Grade WHV 2 represents a grade of WIPCOM where the grain directions of alternate laminations are at right angles to each other.

WIPCOM is generally manufactured in the thickness range from 3/8" (9.5 mm) to 4" (102mm).

WIPCOM is not only supplied in standard size sheets, but also supplied in the form of components as per customers' drawings. Components are protected with anti tracking clear insulating varnishes after machining, in

order to preserve the dielectric characteristics of the basic material during long term storage of components.

Recommended applications

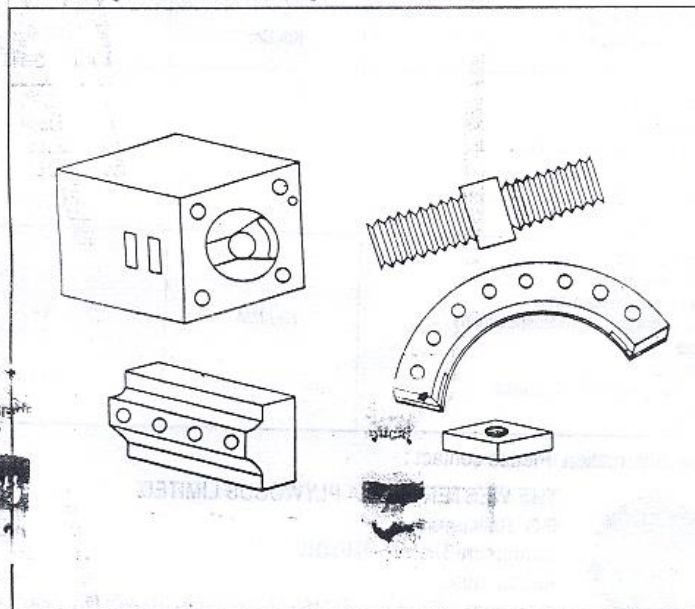
● TYPE 1 material is recommended for use where high tensile and bending characteristics are required besides insulation properties.

● TYPE 2 material is generally recommended for the manufacture of components like arc control pots, base plates, busbars, barriers, nuts etc., where high compression and shear strength characteristics are needed besides insulation properties.

Applications

The following applications have been standardised and WIPCOM is being used on a large commercial scale.

1. Insulated handle
2. Terminal plates
3. Operating shafts
4. Switch bases
5. Screw rods and nuts
6. Phase boards



7. Tap switch plates
8. Cable cleats
9. Brush rocker ring
10. Supporting ring barriers
11. Stator winding overhead rings
12. Lifting rods
13. Guide blocks
14. Mounting panels
15. Arc control pots
16. Bus bar supports
17. Fuse base supports
18. Arc chute covers
19. Inter phase barriers
20. Driving coupling
21. CT & PT clamp plates
22. Coupling arms

23. Stay rods
24. Earthing poles for overhead lines
25. Clamping studs
26. HT impulse test frame
27. Cross arms
28. Indoor bushings
29. Side Clamp for stampings
30. Resistance support for control gear
33. Support for outgoing link
34. Crane roller insulator
35. Electrode guides
36. Slot wedges for motors
37. Switchboard panels
38. Selector switch mounting for tapchanger
39. Fixed isolating contact support

- beam
40. Tumbler switch disc
41. Moving contact carrier
42. Barrier fixing block
43. Switching lever
44. Tension plates

Physical, mechanical and electrical properties.

WIPCOM is a stabilised wood based laminated plastic that remains unaffected under transformer oil for indefinite periods and can be used under oil or in air.

Special grades can also be manufactured to suit individual requirements as per customers specifications.

Properties	Unit	Grade WHV 1	Grade WHV 2
Specific gravity - Minimum	-	1.30	1.30
Percentage of Water absorption at room temperature in 24 hrs. Average %	-	1 - 2	1 - 2
Bending strength : a) Along the grain - Minimum b) Across the grain - Minimum	Kg/ Cm ²	1800	1600 800
Compression strength : a) Flatwise at right angles to laminate and top surface - Minimum b) Parallel to grain Edgewise - Minimum	Kg/ Cm ² Kg/ Cm ²	1600 1100	2000 1150
Shear strength : a) Perpendicular to grain & Laminiae Edgewise - Minimum b) Parallel to Laminiae Edgewise - Minimum	Kg/ Cm ² Kg/ Cm ²	350 250	450 350
Impact strength : (Un-notched sample) a) Perpendicular to Laminate & grain direction of top surface b) Parallel to grain direction of top surface	KGM KGM	0.80 0.50	0.50 0.40
Electrical strength : (At 90 C in oil) a) Right angles to laminate and top surface (1/2" thick specimen) Average b) Edgewise : Across the grain for 1" specimen Average	Kv / MM Kv / Thickness	4 25 - 40	4 25 - 40

For further information, Please contact :



THE WESTERN INDIA PLYWOODS LIMITED

P.O. Ballapatam
Cannanore District - 670 010
Kerala, India.

Telephone : 778151 / 778152. Telex : 805-201-WIP IN. Fax : 497-78181