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Thermoset Insulated & Silicon Sheathed Flat Cable for Submersible Pump Motors

Introduction

“Emgee” a unit of Mangal Chand Group produces high performance copper Winding Wires, TPR/PVC/PE insulated wire and cables.

Emgee Cables is also India’s leading manufacturer of Submersible Winding Wires & Cables and enjoys an enviable reputation as a quality manufacturer.

The company has most modern computerized fully automatic lines supported by an excellent forward & backward integrations including Wire Drawing with online annealing, High Speed Bunchers, Automatic packing machines and very sophisticated online & offline testing systems.

Emgee Cables & Communication limited is a public company, with shares listed on stock exchange. The company is ISO certified and has all the relevant quality certifications.

Company’s Submersible Winding Wires / Cables are approved by major pump manufacturers viz Caprari, Ustunel, Impo, KSB, Shakti, Texmo, Duke, Plugra etc.

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Disclaimer

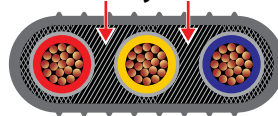
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Submersible Flat Cable (Double Sheathed)

Characteristics

Designation • -----	• Thermoset Insulated, Sheathed & Silicon Coated Three Core Flat Submersible Cable
Construction Characteristics	
Conductor flexibility • -----	• Flexible bunched Electrolytic grade copper as per class 2 or 5 of IS: 8130/1984
Sheath Colour • -----	• Steel Grey
Conductor Material • -----	• Annealed Bare copper
Dimensional Characteristics	
Dimensional Standards • -----	• See table
Electrical Characteristics	
Rated Voltage U ₀ /U (U _m) • -----	• 450/750 V
Test voltage • -----	• 3.0 KV for five minutes
Short Circuit Temp. • -----	• 225°C
Mechanical Characteristics	
Cable flexibility • -----	• Flexible
Min. bending radius • -----	• 4 X D ~ 5 X D
Usage Characteristics	
Flame retardant • -----	• as per IS: 694/1990
Chemical resistance • -----	• Accidental
Oil resistance • -----	• Yes
Operating temperature, range • -----	• (-)40 (+)80°C
Weather resistance • -----	• Better than PVC & Rubber
Min. ambient temp. • -----	• -40°C ~ -15°C
Max operation temp. • -----	• +80°C in Mobile Installation and +90°C in Fixed Protected installation.
Minimum laying temp. • -----	• -40°C

Water Resistant* Safety Walls



Silicon Ribs



99.9% Pure Copper

Crosslink Thermoset

Coating for Extra Protection

Safety Walls

Silicon Coating with Extra Ribs

Certification • -----



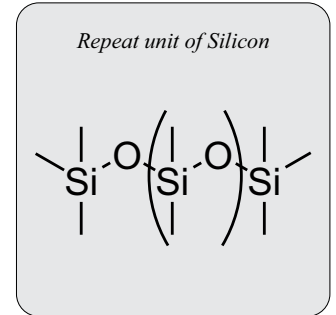
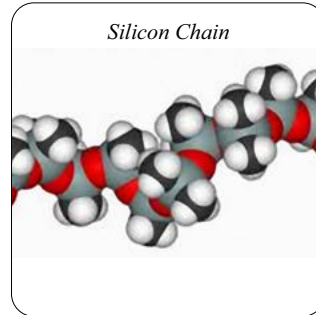
Norms • ----- • IS:694, BS6500, IEC-60227

*Only for cables with extra width.

Description: Silicon offers good resistance to extreme temperatures. At extreme temperatures, the tensile strength, elongation, tear strength and compression set can be far superior to conventional PVC. PVC has a carbon to carbon backbone which can leave them susceptible to ozone, UV, heat and other ageing factors that silicon can withstand well. This makes it one of the best elastomers of choice in many extreme environments.

Features:

- Double Sheathed.
- Fully protected inner core with Safety Walls to prevent water penetration and heat transfer to another core.
- Silicon coated sheath to protect core from External Heat, Moisture etc
- Special Ribs for outer protection
- Twin coated inner core for protection against U.V., Heat & Voltage Fluctuation



Technical Specifications:

Conductor		Insulation	Sheath	Conductor Resistance @20°C (max) ohms/km.	Current Carrying Capacity @40°C Amps.	Water Moisture Absorption	Silicon Polymer Resistant to	Temp. Ratings (for all sizes)	
Area sq.mm.	No. of Strands/ Dia. mm.	Thickness (Nom) mm.	Thickness (Nom) mm.					Condition	Temp
1.5	22/0.3*	0.60	0.90	12.10	17	Less than 0.6 mg/cm ²	U.V. & Heat Resistant Oil, Soil, Chemical, Metal Resistant	Normal	90°C
2.5	36/0.3*	0.70	1.00	7.410	23			Overload	125°C
4	56/0.3**	0.80	1.10	4.950	37			Short Circuit	260°C
6	84/0.3**	0.80	1.10	3.300	46			Cold	-10°C
10	140/0.3**	1.00	1.20	1.910	66			90% Retention (Elongation/ Tensile)	@ 90°C
16	226/0.3**	1.00	1.30	1.210	85				
25	354/0.3**	1.20	1.50	0.780	113				
35	495/0.3**	1.20	1.60	0.554	139				

Note:- The number of Wires and Strands Diameter will be such as to satisfy the requirement of conductor resistance as per IS 8130:1984

*As per class 2 of IS:8130/1984

**As per class 5 of IS:8130/1984

Current Carrying Capacity (Amps) Comparison Chart:

at standard voltage 50Hz cycles and ideal conditions as per IS:8034/2002

S.No.	Cable Type	Size							
		1.5	2.5	4	6	10	16	25	35
1	PVC Insulation	14	18	26	31	42	57	72	90
2	Silicon	17	23	37	46	66	85	113	139