



DE-COMPOSITE

DE composites are made by impregnating reinforcing fibres with thermosetting resins to produce materials with properties or characteristics superior to those of the individual material. Most composites are formed of two phases; Matrix and Reinforcement. The matrix is continuous phase material which is usually stiff and weaker than the reinforcement.

It is used to hold the reinforcement together and distribute the load among the reinforcements. Reinforcements in the form of fibres, fabric, whiskers, or particles are embedded in the matrix to produce the composite. They are usually stronger and stiffer than the matrix and provide the primary load-carrying capability of the composite.

DE Composite materials possess excellent wear resistance, high specific strength, good dimensional stability, durability and long-term resistance to severe chemical environments. The additions of solid friction modifiers such as PTFE and graphite enhance the wear properties and life of the materials, enabling them to be operated at higher speeds and loads.

Material	Material structure	Operating conditions	Typical usage
COM-10 / COM-20	Fine weave cotton fabric – reinforced phenolic composites	Oil or grease lubricated, low maintenance	Wear ring for hydraulic cylinders, sliding bearing, bushes, thrust washers
COM-30	Woven aramid fabric – reinforced phenolic composite with graphite additions	Dry, maintenance free	Iron and steel industry, agricultural equipment, wear ring, pump bearing,
COM-40	Synthetic fibre – reinforced polyester composites with graphite friction modifier	Dry, grease lubricated, water lubricated, low maintenance	Marine, petroleum and chemical plants, railways, agriculture, hydraulics
COM-50	Synthetic fibre – reinforced polyester composites with PTFE micro powder additions	Dry, water lubricated, maintenance free	Wear ring, material handling equipment, food processing, automotive

	Unit	COM-10	COM-20	COM-30	COM-40	COM-50	
Temperature range	°C	-40 / +130	-40 / +130	-40 / +200	-40 / +120	-40 / +120	
Max. speed	m/s	2,2	2,5	2,5	2,0	2,0	
Max. load	Static	N/mm ²	270	250	340	330	330
	Dynamic	N/mm ²	54	45	80	80	80
Max. PV	Dry	N/mm ² x m/s	0,2	0,25	1,5	0,20	0,25
	Oil	N/mm ² x m/s	0,38	0,50	2,0	0,35	0,50
	Grease	N/mm ² x m/s	0,60	0,75	2,5	0,64	0,70
Friction	Dry		0,13-0,17	0,11-0,15	0,12-0,16	0,10-0,14	0,05-0,10
Density	g/cm ³	1,31	1,35	1,40	1,24	1,21	
Material swell in water	% at 20 °C	2,0	2,0	0,1	0,1	0,1	
Colour		Light brown	Black	Black	Black	Cyan	
Tolerances	Housing H7 Recommended shaft tolerance h7						

COM-10 / COM-20

Material Structure

- Fine weave cotton fabric-reinforced phenolic composites
- COM-10: No friction modifier
 - COM-20: With graphite additions

Features

- Good mechanical strength
- Good dimensional stability
- Good chemical resistance
- Readily machinable



Operating Conditions

- Oil or grease lubricated, low maintenance

Availability

- Tubes, cylindrical bushes, flange bushes, machined parts

Typical Usage

- Wear ring for hydraulic cylinder, sliding bearing, bushes and thrust plates

COM-30

Material Structure

- Woven aramid fabric-reinforced phenolic composite with graphite
- This material has excellent thermal stability and wears resistance

Features

- High wear resistance
- High load capacity
- Excellent impact resistance
- Good chemical resistance



Operating Conditions

- Dry, maintenance-free

Availability

- Tubes, cylindrical bushes, plates, machined parts

Typical Usage

- Iron and steel industry, agricultural equipment, wear rings, pump bearing, heavy transport

COM-40

Material Structure

- Synthetic fibre-reinforced polyester composites with friction modifier
- COM-40: Graphite additions

Features

- High wear resistance
- Near zero moisture absorption
- Impact and shock resistant
- Self-lubricating
- High load capacity



Operating Conditions

- Dry, grease lubricated, water-lubricated, low maintenance

Availability

- Tubes, cylindrical bushes, flange bushes, plates, machined parts

Typical Usage

- Marine, petroleum and chemical plant, railway, agriculture, hydraulics

COM-50

Material Structure

- Synthetic fibre-reinforced polyester composite with PTFE micro-powder
- COM-50: PTFE additions

Features

- Low frictional coefficient
- High load carrying capacity
- Good chemical resistance
- Non magnetic/ low water uptake
- No stick slip



Operating Conditions

- Dry, water lubricated, maintenance-free

Availability

- Tubes, plates, cylindrical bushes, flange bushes, machined parts

Typical Usage

- Wear rings, material handling, food processing, automotive, offshore