

## Compounds

### Operating conditions demand the correct cover compound.

Pure and simple, the primary purpose of conveyor belt “compounds” is to protect the valued carcass. Carcass compounds, skim and cable rubber formulations provide the adhesion and flexibility the belt needs while facing continual dynamic challenges of the conveyor system. Cover compounds must be of sufficient quality and thickness to withstand the varied operational and environmental hazards present.

Compounds, including both the carcass and cover varieties, are essentially elastomeric recipes. Each such recipe typically includes a primary polymer which defines the “grade” or expected function of the compound. Also included are a number of supporting ingredients, such as carbon black, plasticizers, curing agents, and clays/fillers. Today, the number of different compound recipes available from these individual components is staggering. Fenner Dunlop analyzes these seemingly endless options through extensive research and development, rigid quality control testing, and years of application experience. Only from such a thorough study can they be assured of providing the most innovative, and appropriate, compounds to meet today’s increasing material haulage demands.

Bottom line...when both the cover and carcass compounds are functioning together as a team, you have a conveyor belt solution that truly can provide the lowest cost per ton of material conveyed. Fenner Dunlop is committed to working with each and every customer in satisfying that challenge!





## Compounds Categories

### Heat Resistant Covers

#### DeltaHeat®

- Premium hot material compound providing superb protection against prolonged exposure to high temperature payloads and abrasive materials
- Temperature resistant to 400° F (205° C) for abrasive coarse lumps (2 inches + / 50mm +) and 350° F (175° C) for abrasive fines
- Designed to resist the negative effects of cover cracking, hardening, abrasion, tearing and flexing associated with high temperature environments
- Applications include, but are not limited to: hot cement clinker, iron ore pellets, and casting sand

#### White DeltaHeat®

- Premium hot material compound providing superb protection against prolonged exposure to high temperature payloads and abrasive materials
- Temperature resistant to 350° F (175° C) for abrasive coarse lumps (2 inches + / 50mm +) and 300° F (150° C) for abrasive fines
- Off White-color compound, designed to resist the negative effects of cover cracking, hardening, tearing and flexing associated with high temperature environments

#### Butyl

- Provides good chemical resistance in elevated operating temperature environments
- Temperature resistant to 350° F (175° C) for abrasive coarse lumps (2 inches + / 50mm +) and 300° F (150° C) for abrasive fines
- Applications include but are not limited to: cement clinker, calcined lime, foundry sand and clay

#### Sahara®

- Provides good abrasion resistance in elevated operating temperature environments
- Temperature resistant to 300° F (150° C) for abrasive coarse lumps (2 inches + / 50mm +) and 250° F (120° C) for abrasive fines
- Ideal for hot dusty products and environments

### Oil Resistant

#### CWOR (Cold Weather Oil Resistant)

- Outstanding resistance to the very difficult combined effects of cold, abrasion and petroleum products
- Cold Weather Temperature resistance to -50° F (-46° C)
- Recommended for conveying tar sands, bitumen, oil sprayed coal and similar materials

#### MOR (Moderate Oil Resistance)

- Recommended for specialized service such as wood chips, whole grains like corn and soybeans, waste disposal, sewage, sludge and lightly oil treated materials
- Resistant to the deteriorating effects of moderately oily materials and terpenes

#### MOR (E)

- Excellent abrasion resistant cover with outstanding resistance to the deteriorating effects of moderately oily materials and terpenes
- Increased oil resistant properties, recommended for specialized service such as wood chips, whole grains such as corn and soybeans, waste disposal, sewage, sludge and lightly oil treated materials

#### ORN (Oil Resistant Neoprene)

- Excellent resistance to abrasion and deteriorating effects of heavy concentrations of crude oils, lubricating oils and greases
- Recommended for conveying lightly oily covered coke, abrasive granules and dry sulfur

#### ORP (Oil Resistance Plus)

- Superior resistance to materials containing high concentrations of animal fats and oils
- Recommended for use involving heavy exposure to aromatic hydrocarbons such as petroleum based oily coke, benzol and toluene

#### ORWP (Oil Resistance Wood Pitch)

- Premium moderately oil resistant compound for the Forest Products Industry
- Resists deteriorating effects of terpenes
- Ideal for lumber and wood chip handling

### Heat & Oil Resistant Covers

#### OHR (Oil & Heat Resistant)

- Excellent resistance to oil and heat up to 250° F (120° C) temperatures for coarse lumps (2 inches + / 50mm +) and 200° F (93° C) for abrasive fines
- Recommended for conveying hot mixtures containing diesel oil as well as kerosene, petroleum coke, hot asphalt, paving mixes and carbon pitch
- Ideal for oil extractors and applications handling oily grains and seeds where the belt must withstand the effects of vegetable oils at high temperatures as well as moisture from steam

#### SOHR (Super Oil & Heat Resistant)

- Superior resistance to oil and heat up to 350° F (175° C) for coarse lumps (2 inches + / 50mm +) and 300° F (150° C) for abrasive fines
- Recommended for conveying hot mixtures containing diesel oil as well as kerosene, petroleum coke, hot asphalt, paving mixes and carbon pitch

**Specialty Cover Compounds**

**Static Conductive Compounds**

Greatly exceed the requirements as set forth by OSHA, tested by ASTM 25 and ISO 284 procedures

**OSHA**

Surpasses U.S. Occupational Safety and Health Administration specifications for static conductivity

**CSA**

Meets Canadian Standards Association M422 – M87 current specification for Grade C

**Duroslide®**

- Low coefficient of friction slider bed compound for the Wood Product Industry
- .30 coefficient of friction
- Non-reverting, non-marking dark brown compound

**ClimateGuard**

- Excellent resistance to oil and heat up to 250° F (120°C) temperatures for coarse lumps (2 inches +/- 50mm) and 200° F (93° C) for abrasive fines
- Also provides excellent oil resistance down to -50° F (-46° C)
- Provides excellent abrasion resistance at both below zero and elevated temperatures

**Natural Tan Gum**

- Natural rubber compound for slow down conveyor applications in the Wood Products Industry
- Soft compound with high coefficient of friction
- Non-marking, highly abrasion resistant tan rubber compound

**Compound Specifications**

**Recommended MINIMUM Cover Thickness**

Class of Material	Top Cover		Bottom Cover	
	Inches	mm	inches	mm
<b>NON-ABRASIVE MATERIALS</b> - Wood Chips, Pulp, Grain, Loose Cement, Potash Ore or very fine Coal	1/16 to 1/8	1.5 to 3.0	1/16	1.5
<b>MILDLY ABRASIVE MATERIALS</b> - Sharp Sand, Clinker, Earth, Bituminous Coal and Rock under 3" size.	1/8 to 3/16	3.0 to 4.5	1/16	1.5
<b>ABRASIVE MATERIALS</b> - Anthracite Coal, Coke, Sinter, Gravel, or Crushed Stone. Overburden or coal up to 10" size. Iron and Copper ores or Limestone under 6" size	3/16 to 1/4	4.5 to 6.0	3/32	2.0
<b>HEAVY ABRASIVE MATERIALS</b> - Iron, Copper, Rock Ores, Zinc, Lead Ores, or ROM coal, Limestone or Slag under 9" size.	1/4 to 3/8	6.0 to 9.5	1/8	3.0
<b>HEAVY, SHARP ABRASIVE MATERIALS</b> - Trap rock, quartz, Hard Ores, Slag, glass cullet. Any hard heavy sharp ore over 9" size.	3/8 to 3/4	9.5 to 19.0	3/16	4.5

**Recommended Service Temperatures**

**Cover Weight Factors**

Type of Compound	HOT – <u>Maximum</u> Load Temperature		COLD – <u>Low</u> Temperature Limit	lbs/in/ft ... per 1/32" thickness	kg/m <sup>2</sup> ... per 1 mm thickness
	Fines or mixed	Coarse 2" or More			
CWOR, MATCHLESS, MATCHLESS PLUS, DIN X	180 °F 82 °C	200 °F 93 °C	-50 °F -46 °C	.016	0.936
GRANITE, ZR1, GUARDIAN AR, PLATINUM, PLATINUM PLUS, TITANIUM, DIN Y, ABRADER	180 °F 82 °C	200 °F 93 °C	-40 °F -40 °C	.016	0.936
MOR, MOR (E), ORP, ORWP, UGH	180 °F 82 °C	200 °F 93 °C	-30 °F -34 °C	.016	0.936
MINING FFORN, ORN, MINING FFORNS	205 °F 96 °C	225 °F 110 °C	-15 °F -26 °C	.017	0.994
FIRE BOSS, FIRE BOSS V, FIRE BOSS AR	180 °F 82 °C	200 °F 93 °C	-30 °F -34 °C	.019	1.111
CLIMATEGUARD	200 °F 93 °C	250 °F 120 °C	-50 °F -46 °C	.016	0.936
CGH, CSA-FF, CSA-FFOR, MINING-FAR, MINING-FFAR, MINING-FFSAR, MINING FFOR	180 °F 82 °C	200 °F 93 °C	-40 °F -40 °C	.018	1.053
DELTAHEAT	350 °F 175 °C	400 °F 205 °C	-40 °F -40 °C	.015	0.887
BUTYL, WHITE DELTAHEAT	300 °F 150 °C	350 °F 175 °C	-40 °F -40 °C	.015	0.887
SAHARA, SAHARA SAR	250 °F 120 °C	300 °F 150 °C	-40 °F -40 °C	.015	0.887
OHR	200 °F 93 °C	250 °F 120 °C	-10 °F -23 °C	.015	0.887
SOHR	300 °F 150 °C	350 °F 175 °C	-10 °F -23 °C	.015	0.887
CSA-FFAR, GUARDIAN OR	180 °F 82 °C	200 °F 93 °C	-40 °F -40 °C	.017	0.994
GUARDIAN, GUARDIAN CA	200 °F 93 °C	225 °F 110 °C	-30 °F -34 °C	.017	0.994

Contact Fenner Dunlop for special applications and/or cover compounds.