

No. 110

Elastomer selection for Firestone Airstroke[®] actuators/Airmount[®] isolators

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General Discussion

There are several different constructions available for the Firestone air spring. Within this document we will discuss the various combinations and the pros and cons of each selection.

Every standard air spring consists of 4 layers.

- The inner layer which actually contains the air.
- The first layer of fabric reinforced rubber applied at a specific angle.
- The second layer of fabric reinforced rubber which is laid to a specific angle to the first layer.
- The cover to protect the bias fabric plies.

The various construction possibilities are as follows:

1	Inner: Bias Fabric Plies Cover:	Firestone Neoprene Natural Rubber Natural Rubber
Standard configuration Temperature rating from -37° to 57°C		
2	Inner: Bias Fabric Plies Cover:	Natural Rubber Natural Rubber Natural Rubber
Low Temperature configuration Temperature rating from -53° to 57°C		
3	Inner: Bias Fabric Plies Cover:	Firestone Neoprene Firestone Neoprene Firestone Neoprene
High Temperature operations Temperature rating from -37° to 74°C Fair oil resistance		
4	Inner: Bias Fabric Plies Cover:	Epichlorohydrin Epichlorohydrin Epichlorohydrin
Ultra High Temperature operations Temperature rating from -17° to 107°C Good oil resistance		

Firestone neoprene is a blend of neoprene and natural rubber.
Firestone is now working toward utilizing 100% neoprene to increase the temperature rating.