FLUID POWER TECHNICAL NOTE

Gates Hydraulic Hoses Meet MDG 41 Requirements

MDG 41 is a mining design guideline for Fluid Power System Safety at Mines. MDG 41 section 1.5.2 provides flame resistant and antistatic (FRAS) requirements. MDG 3608 section 6.2 provides test methods and criteria for both flame resistance and antistatic properties of Hydraulic hoses. Gates provides numerous hoses that are compliant with MDG 41 Fire Resistance and Antistatic requirements:

Hose Family	Coupling	Hose Dash Size								
		4	6	8	10	12	16	20	24	32
MXT	G	Qualified								
M3K	G	Qualified		Use MXT			Qualified			
M4K	G	Use MXT			Use MXG 4K-XTP					
M4K-XTF	G		use MXG 4K-XTP							
M5K	G	Use MXT								
M6K	G	Use MXT								
M2T	G	Use MXT								
G1	G	Qualified								
G2	G/GS	Use MXT (G)						Qualified (GS)		
J2AT	G	Qualified								
MXG 4K XTP	GS		Qualified							
EFG4K	GS		use MXG 4K-XTP					use 5K		
EFG5K	GS		Qualified							
EFG6K	GS		Qualified							

Flame Resistance:

MDG 3608 references ISO 8030 for test methods, and dictates per ISO 6805:1994 Clause 15 that the flame or glow shall not persist beyond 30 seconds after the removal of the flame for the average of six samples. Gates tested MXG™ 4K XTP hose in all sizes (6, 8, 10, 12, and 16) per ISO 8030:2014. **The testing was conclusive that the above Gates hoses meet the flame resistance criteria.** Tests of the cover in the above hoses demonstrated that the flame or glow did not persist beyond 30 seconds after the removal of the flame for the average of six samples. All tests were conducted at Gates Customer Solutions Center and are documented in our Sample Manager system.

Reference: S-1902116, J-1904148, and J-2001876

Antistatic:

MDG 3608 references ISO 8031 for test methods, and dictates per ISO 6805:1994 Clause 14 that the electrical resistance must not exceed 2 MΩ/meter on five hose samples. Gates tested the above hose-size combinations per ISO 8031:2009 test method 4.8 for 'Hose assemblies fitted with metal end fittings'. **The testing was conclusive that the above Gates hoses with the corresponding couplings meet the antistatic criteria.** All tests were conducted at Gates Customer Solutions Center and are documented in our Sample Manager system.

Reference: J-1902100, J-1903480, J-2001008, J-2001598, J-2002616, and J-2003280

Conclusion:

Gates hydraulic hoses listed above meet the Fire Resistance and Anti-Static requirements per MDG 41. Also note that all of these Gates® wire braid and wire spiral hoses also meet Mine Safety Health Administration (MSHA) flame resistance requirements, certification 2G-11C.

Should you have any questions or concerns regarding Gates hydraulic and industrial hose products, please contact **Product Application in Denver, Colorado at (303) 744-5070 or by e-mail at** FPPASUPPORT@gates.com**.**