



Flowtech Hydraulic Hose & Fittings

Approvals & Certification

All products sold under the FT Pro brand in the attached document have been designed, tested and manufactured to the appropriate international standard from the following list:

EN853, DIN853, DIN20022, SAE100R1, 2, EN857-1SC & 2SC, EN856-4SP, EN856-4SH, MSHAR2AT

Full product compatibility tests have been undertaken and the manufacturers can certify that the hose and fittings are a matched system, and can certify the accuracy of the information enclosed in this document.

Data covers:

- Impulse
- Pressure
- Crimping
- Skive (where appropriate)
- Go and No Go

Signed the Manufacturer of Hose:

Position: General Manager
Mr Deng Ji Sen



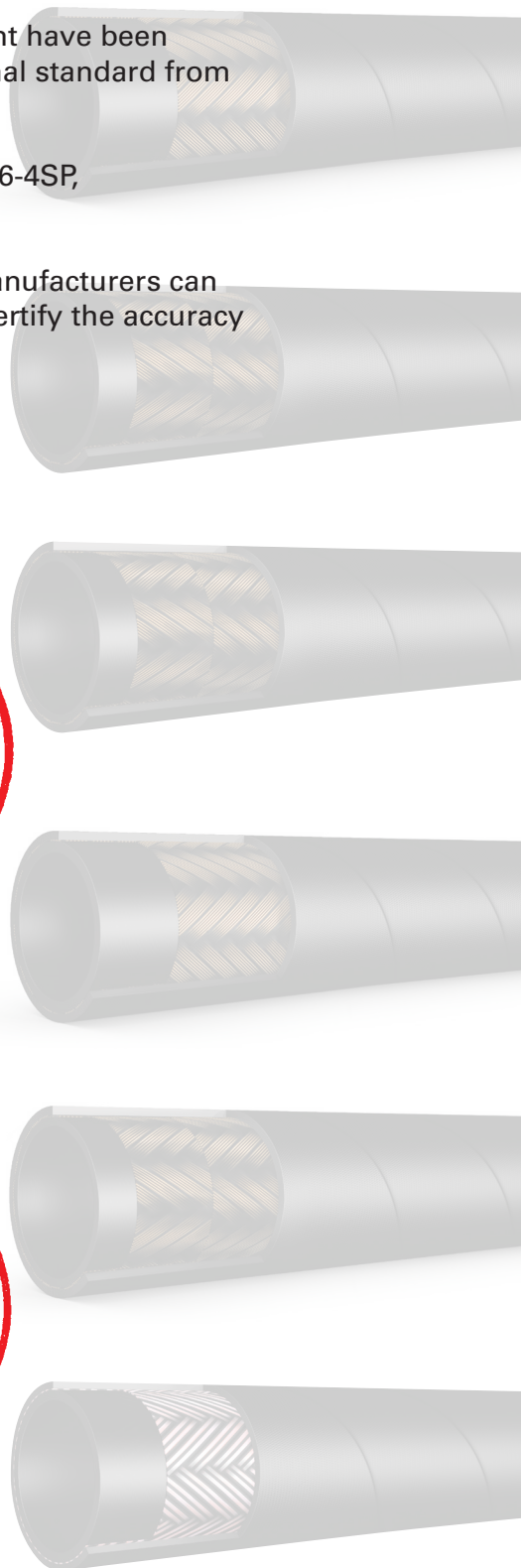
Official Stamp

Signed the Manufacturer of Fittings:

Position: General Manager
Mr Chong er Wang



Official Stamp



Hydraulic Hose, EN853, DIN20022, SAE100R1AT

Part Number	Size			ID		Wire Dimension		OD	1SN	Working Pressure		Pulse Pressure		Burst Pressure		Bend Radius		Weight	Impulse Test Rate	Crimping Dimensions	Size in mm	Crimping Dimensions	Size in mm	Tail ID Top Tolerance	Tail ID Bottom Tolerance	Crimped No Go	Crimped Go
	mm	inch	SAE	min	max	min	max			max	bar	psi	bar	psi	bar	psi	Inch										
100R1AT-03	4.7	3/16	-3	4.7	5.0	8.2	10.4	12.5	250	3625	500	7230	1000	14503	3.54	90	0.19	150000	-	-	FT3-12-03CF	15	2.89	3.05	2.80	2.93	
100R1AT-04	6.3	1/4	-4	6.2	7	10.6	11.6	14.1	225	3260	450	6525	900	13050	3.94	100	0.25	150000	FT1-12-04CF	17.5	FT3-12-04CF	17.8	3.86	3.67	3.67	3.45	
100R1AT-05	8	5/16	-5	7.7	8.5	12.1	13.3	15.7	215	3120	430	6235	850	12325	4.53	115	0.31	150000	FT1-12-05CF	18.5	FT3-12-05CF	20.5	5.29	5.11	5.11	4.91	
100R1AT-06	10	3/8	-6	9.3	10.1	14.5	15.7	18.1	180	2610	360	5220	720	10440	5.12	130	0.36	150000	FT1-12-06CF	21.15	FT3-12-06CF	21.6	6.78	6.42	6.42	6.13	
100R1AT-08	12.5	1/2	-8	12.3	13.5	17.5	19.1	21.4	160	2320	320	4640	640	9280	7.09	180	0.45	150000	FT1-12-08CF	23.3	FT3-12-08CF	24	9.21	8.86	8.86	8.4	
100R1AT-10	16	5/8	-10	15.5	16.7	20.6	22.2	24.5	130	1885	260	3770	520	7540	7.87	200	0.52	150000	FT1-12-10CF	26.8	FT3-12-10CF	28.7	12.09	11.59	11.59	10.99	
100R1AT-12	19	3/4	-12	18.6	19.8	24.6	26.2	28.5	105	1520	210	3045	420	6090	9.45	240	0.65	150000	FT1-12-12CF	30.5	FT3-12-12CF	31.3	14.46	13.91	13.91	13.31	
100R1AT-16	25	1	-16	25	26.4	32.5	34.1	36.6	88	1280	175	2540	350	5075	11.81	300	0.91	150000	FT1-12-16CF	39	FT3-12-16CF	41	18.89	18.29	18.29	17.68	
100R1AT-20	31.5	1.1/4	-20	31.4	33	39.3	41.7	44.8	63	910	150	2175	250	3625	16.54	420	1.30	150000	FT1-12-20CF	48.4	FT3-12-20CF	48.5	25.4	24.69	24.69	23.8	
100R1AT-24	38	1.1/2	-24	37.7	39.3	45.6	48	52.1	50	725	100	1450	200	2900	19.69	500	1.7	150000	FT1-12-24CF	56.8	FT3-12-24CF	58.5	31.4	30.6	30.6	29.8	
100R1AT-32	51	2	-32	50.4	52	58.7	61.7	65.5	40	580	80	1160	160	2320	24.8	630	2	150000	FT1-12-32CF	69.3	FT3-12-32CF	70	41.4	40.6	40.6	30.8	

Hydraulic Hose, EN853, DIN20022, SAE100R2AT

Part Number	Size			ID		Wire Dimension		OD 2SN	Working Pressure		Pulse Pressure		Burst Pressure		Bend Radius		Weight	Impulse Test Rate	Crimping Dimensions	Size in mm	Crimping Dimensions	Size in mm	Tail ID Top Tolerance	Tail ID Bottom Tolerance	Crimped No Go	Crimped Go
	mm	inch	SAE	min	max	min	max		max	bar	psi	bar	psi	bar	psi	Inch										
100R2AT-03	4.7	3/16	-3	4.7	5.0	9.1	11.5	14.1	415	6019	830	12038	1650	23931	3.54	90	0.32	200000	-	-	FT3-12-03CF	16.4	2.89	3.05	2.80	2.93
100R2AT-04	6.3	1/4	-4	6.2	7	12.1	13.3	15.7	400	5800	800	11600	1600	23200	3.94	100	0.36	200000	FT2-12-04CF	18.5	FT3-12-04CF	18.1	3.86	3.67	3.67	3.45
100R2AT-05	8	5/16	-5	7.7	8.5	13.7	14.9	17.3	350	5075	700	10150	1400	20300	4.53	115	0.45	200000	FT2-12-05CF	19.5	FT3-12-05CF	19.7	5.29	5.11	5.11	4.91
100R2AT-06	10	3/8	-6	9.3	10.1	16.1	17.3	19.7	330	4785	660	9570	1320	19140	5.12	130	0.54	200000	FT2-12-06CF	22.25	FT3-12-06CF	22.1	6.78	6.42	6.42	6.13
100R2AT-08	12.5	1/2	-8	12.3	13.5	19	20.6	23	275	3990	550	7975	1100	15950	7.09	180	0.68	200000	FT2-12-08CF	24.4	FT3-12-08CF	24.6	9.21	8.86	8.86	8.4
100R2AT-10	16	5/8	-10	15.5	16.7	22.2	23.8	26.2	250	3625	500	7250	1000	14500	7.87	200	0.8	200000	FT2-12-10CF	28	FT3-12-10CF	28.2	12.09	11.59	11.59	10.99
100R2AT-12	19	3/4	-12	18.6	19.8	26.2	27.8	30.1	215	3120	430	6235	850	12325	9.45	240	0.94	200000	FT2-12-12CF	32	FT3-12-12CF	32.5	14.46	13.91	13.91	13.31
100R2AT-16	25	1	-16	25	26.4	34.1	35.7	38.9	165	2390	325	4710	650	9425	11.81	300	1.35	200000	FT2-12-16CF	40.2	FT3-12-16CF	40.3	18.89	18.29	18.29	17.68
100R2AT-20	31.5	1.1/4	-20	31.4	33	43.3	45.7	49.5	125	1810	250	3625	500	7250	16.54	420	2.15	200000	FT2-12-20CF	50	FT3-12-20CF	51.5	25.4	24.69	24.69	23.8
100R2AT-24	38	1.1/2	-24	37.7	39.3	49.6	52	55.9	90	1305	180	2310	360	5220	19.69	500	2.65	200000	FT2-12-24CF	59.5	FT3-12-24CF	59.7	31.4	30.6	30.6	29.8
100R2AT-32	51	2	-32	50.4	52	62.3	64.7	68.6	80	1160	160	2320	320	4640	24.8	630	3.42	200000	FT2-12-32CF	72.3	FT3-12-32CF	73.4	41.4	40.6	40.6	30.8

Multi Spiral Hydraulic Hose, EN856-4SP

Part Number	Size			ID		Wire Dimension		OD		Working Pressure		Pulse Pressure		Burst Pressure		Bend Radius		Weight	Impulse Test Rate	Crimping Dimensions	Size in mm	Crimping Dimensions	Size in mm	Tail ID Top Tolerance	Tail ID Bottom Tolerance	Skive Length JMF56 in mm	Skive Length JMF57 in mm	Crimped No Go	Crimped Go
	mm	inch	SAE	min	max	min	max	min	max	bar	psi	bar	psi	bar	psi	Inch	mm	Kg/mtr	Cycles	JMF56 Type Ferrule	JMF57 Type Ferrule	mm	mm	mm	mm	External	External	mm	mm
4SP-04	6.3	1/4	-4	6.2	7.0	14.1	15.3	17.1	18.7	450	6525	900	13050	1800	26100	5.91	150	0.64	400000										
4SP-06	10	3/8	-6	9.3	10.1	16.9	18.1	20.6	22.2	445	6450	890	12905	1780	25810	7.09	180	0.75	400000	JMF56-06CF	22.8	JMF57-06CF	23	6.78	6.42	27	—	6.42	6.13
4SP-08	12.5	1/2	-8	12.3	13.5	19.4	21.0	23.8	25.4	415	6020	830	12035	1660	24070	9.06	230	0.89	400000	JMF56-08CF	25.8	JMF57-08CF	26.5	9.21	8.86	28	32	8.86	8.40
4SP-10	16	5/8	-10	15.5	16.7	23.0	24.6	27.4	29.0	350	5075	700	10150	1400	20300	9.84	250	1.10	400000	JMF56-10CF	28.8	JMF57-10CF	29.7	12.09	11.59	33	—	11.59	10.99
4SP-12	19	3/4	-12	18.6	19.8	27.4	29.0	31.4	33.0	350	5075	700	10150	1480	21460	11.81	300	1.50	400000	JMF56-12CF	33.6	JMF57-12CF	34	14.46	13.91	32	40	13.91	13.31
4SP-16	25	1	-16	25.0	26.4	34.5	36.1	38.5	40.9	280	4060	560	8120	1120	16240	13.39	340	2.00	400000	JMF56-16CF	41.5	JMF57-16CF	43	18.89	18.29	42	48	18.29	17.68
4SP-20	31.5	1.1/4	-20	31.4	33.0	45.0	47.0	49.2	52.4	210	3045	420	6090	840	12180	18.11	460	3.00	400000	JMF56-20CF	51.0	JMF57-20CF	53	25.40	24.69	48	55	24.69	23.80
4SP-24	38	1.1/2	-24	37.7	39.3	51.4	53.4	55.6	58.8	185	2680	370	5365	740	10730	22.05	560	3.40	400000	JMF56-24CF	59.5	JMF57-24CF	60.5	31.40	30.60	60	68	30.60	29.80
4SP-32	51	2	-32	50.4	52.0	64.3	66.3	68.2	71.4	165	2390	330	4785	660	9570	25.98	660	4.35	400000	JMF56-32CF	72.5	JMF57-32CF	74.5	41.40	40.60	61	73	40.60	30.80

Multi Spiral Hydraulic Hose, EN856-4SH

Part Number	Size			ID		Wire Dimension		OD		Working Pressure		Pulse Pressure		Burst Pressure		Bend Radius		Weight	Impulse Test Rate	Crimping Dimensions	Size in mm	Tail ID Top Tolerance	Tail ID Bottom Tolerance	Skive Length in mm		Crimped No Go	Crimped Go
	mm	inch	SAE	min	max	min	max	min	max	bar	psi	bar	psi	bar	psi	Inch	mm	Kg/mtr	Cycles	JMF4SH Type Ferrule	mm	mm	Internal	External	mm	mm	
4SH-12	19	3/4	-12	18.6	19.8	27.6	29.2	31.4	33.0	420	6090	840	12180	1680	24360	11.02	280	1.70	400000	JMF4SH-12CF	35.1	14.46	13.91	16	43	13.91	13.31
4SH-16	25	1	-16	25.0	26.4	34.4	36.0	37.5	39.9	380	5510	760	11020	1520	22040	13.39	340	2.50	400000	JMF4SH-16CF	43.4	18.89	18.29	18	59	18.29	17.68
4SH-20	31.5	1.1/4	-20	31.4	33.0	40.9	42.9	43.9	47.1	325	4710	650	9425	1300	18850	18.11	460	3.00	400000	JMF4SH-20CF	50.0	25.40	24.69	21	68	24.69	23.80
4SH-24	38	1.1/2	-24	37.7	39.3	47.8	49.8	51.9	55.1	290	4205	580	8410	1160	16820	22.05	560	3.60	400000	JMF4SH-24CF	56.0	31.40	30.60	23	76	30.60	29.80
4SH-32	51	2	-32	50.4	52.0	62.2	64.2	66.5	69.7	250	3625	500	7250	1000	14500	27.56	700	5.00	400000	JMF4SH-32CF	72.4	41.40	40.60	28	80	40.60	30.80

1 Wire Compact Hose, EN857- 1SC

Part Number	Size			ID		Wire Dimension		OD	Working Pressure		Pulse Pressure		Burst Pressure		Bend Radius		Weight	Impulse Test Rate	Crimping Dimensions	Size in mm	Crimping Dimensions	Size in mm	Tail ID Top Tolerance	Tail ID Bottom Tolerance	Crimped No Go	Crimped Go
	mm	inch	SAE	min	max	min	max	max	bar	psi	bar	psi	bar	psi	Inch	mm	Kg/mtr	Cycles	FT1 -FT2 Type Ferrule	FR79 Type Ferrule	mm	mm	mm	mm	mm	mm
1SC-04	6.3	1/4	-4	6.1	6.9	9.6	10.8	13.5	225	3260	450	6525	900	13050	2.95	75	0.20	150000	FR78-04	15.0	FR79-04	14.7	3.86	3.67	3.67	3.45
1SC-06	10	3/8	-6	9.3	10.1	12.7	14.5	16.9	180	2610	360	5220	720	10440	3.54	90	0.19	150000	FR78-06	18.6	FR79-06	19	6.78	6.42	6.42	6.13
1SC-08	12.5	1/2	-8	12.3	13.5	15.9	18.1	20.4	160	2320	320	4640	640	9280	5.12	130	0.23	150000	FR78-08	22.7	FR79-08	23.3	9.21	8.86	8.86	8.40
1SC-12	19	3/4	-12	18.6	19.8	23.2	24.4	26.7	105	1520	210	3045	420	6090	7.09	180	0.34	150000	—	—	FR79-12	30.8	14.46	13.91	13.91	13.31

2 Wire Compact Hose, EN857- 2SC

Part Number	Size			ID		Wire Dimension		OD	Working Pressure		Pulse Pressure		Burst Pressure		Bend Radius		Weight	Impulse Test Rate	Crimping Dimensions	Size in mm	Crimping Dimensions	Size in mm	Tail ID Top Tolerance	Tail ID Bottom Tolerance	Crimped No Go	Crimped Go
	mm	inch	SAE	min	max	min	max	max	bar	psi	bar	psi	bar	psi	Inch	mm	Kg/mtr	Cycles	FT1 -FT2 Type Ferrule	F2SC Type Ferrule	mm	mm	mm	mm	mm	mm
2SC-04	6.3	1/4	-4	6.1	6.9	10.6	11.7	14.2	400	5800	800	11600	1600	23200	2.95	75	0.30	200000	FT3-12-04CF	17.2	F2SC-04	17.6	3.86	3.67	3.67	3.45
2SC-06	10	3/8	-6	9.3	10.1	14.4	15.6	18.3	330	4785	660	9570	1320	19140	3.54	90	0.42	200000	FT3-12-06CF	21.0	F2SC-06	20.5	5.29	5.11	5.11	4.91
2SC-08	12.5	1/2	-8	12.3	13.5	17.5	19.1	21.5	275	3990	550	7975	1100	15950	5.12	130	0.54	200000	FT2-12-08CF	20.6	F2SC-08	24.3	6.78	6.42	6.42	6.13
2SC-12	19	3/4	-12	18.5	19.7	24.5	26.3	28.5	214	3120	430	6235	860	12470	7.86	200	0.80	200000	FT3-12-12CF	30.4	F2SC-12	31.5	9.20	8.86	8.86	8.40
2SC-16	25	1	-16	25.0	26.4	32.5	34.3	36.6	165	2390	330	4785	660	9570	9.84	250	1.15	200000	FT3-12-16CF	37.8	F2SC-16	39	18.89	18.29	18.29	17.68

Hydraulic Hose, MSHA R2AT

Part Number	Size			ID		Wire Dimension		OD	2SN	Working Pressure		Pulse Pressure		Burst Pressure		Bend Radius		Weight	Impulse Test Rate	Crimping Dimensions		Size in mm	Crimping Dimensions		Size in mm	Tail ID Top Tolerance	Tail ID Bottom Tolerance	Crimped No Go	Crimped Go
	mm	inch	SAE	min	max	min	max	max		bar	psi	bar	psi	bar	psi	Inch	mm	Kg/mtr	Cycles	FT1 -FT2 Type Ferrule			FT3 Type Ferrule			mm	mm	mm	mm
MSHAR2AT-04	6.3	1/4	-4	6.2	7.0	12.1	13.3	15.7		400	5800	800	11600	1600	23200	3.94	10	0.36	200000	FT2-12-04CF		18.5	FT3-12-04CF		19.1	3.86	3.67	3.67	3.45
MSHAR2AT-06	10	3/8	-6	9.3	10.1	16.1	17.3	19.7		330	4785	660	9570	1320	19140	5.12	130	0.54	200000	FT2-12-06CF		22.25	FT3-12-06CF		22	6.78	6.42	6.42	6.13
MSHAR2AT-08	12.5	1/2	-8	12.3	13.5	19.0	20.6	23.0		275	3990	550	7975	1100	15950	7.09	180	0.68	200000	FT2-12-08CF		24.4	FT3-12-08CF		24.5	9.21	8.86	8.86	8.40
MSHAR2AT-12	19	3/4	-12	18.6	19.8	26.2	27.8	30.1		215	3120	430	6235	850	12325	9.45	240	0.94	200000	FT2-12-12CF		32	FT3-12-12CF		32	14.46	13.91	13.91	13.31
MSHAR2AT-16	25	1	-16	25.0	26.4	34.1	35.7	38.9		165	2390	325	4710	650	9425	11.81	300	1.35	200000	FT2-12-16CF		40.2	FT3-12-16CF		41	18.89	18.29	18.29	17.68
MSHAR2AT-20	31.5	1.1/4	-20	31.4	33.0	43.3	45.7	49.5		125	1810	250	3625	500	7250	16.54	420	2.15	200000	FT2-12-20CF		50	FT3-12-20CF		51.5	25.40	24.69	24.69	23.8
MSHAR2AT-24	38	1.1/2	-24	37.7	39.3	49.6	52.0	55.9		90	1305	180	2310	360	5220	19.69	500	2.65	200000	FT2-12-24CF		59.5	FT3-12-24CF		59.7	31.40	30.60	30.60	29.80
MSHAR2AT-32	51	2	-32	50.4	52.0	62.3	64.7	68.6		80	1160	160	2320	320	4640	24.80	630	3.42	200000	FT2-12-32CF		72.3	FT3-12-32CF		73.4	41.40	40.60	40.60	30.80



Certificate of Registration

This is to certify that the Management System of:

Fluidpower Group UK Limited T/A Flowtech & Primary Fluid Power

Pimbo Road, Skelmersdale, WN8 9RB

has been approved by Alcumus ISOQAR and is compliant with the requirements of:

ISO 9001: 2015



Certificate Number: **012-QMS-001**

Initial Registration Date: 14/05/1992

Previous Expiry Date: 14/05/2022

Recertification Audit Date: 22/04/2022

Re-issue Date: 26/04/2022

Current Expiry Date: 14/05/2025

Scope of Registration:

Supplier of Fluid Power Products within the UK & ROI for the Pneumatic, Hydraulic & Industrial Sectors.

Signed:
Alyn Franklin, Chief Executive Officer
(on behalf of Alcumus ISOQAR)

A handwritten signature in blue ink that reads "Alyn Franklin".

This certificate will remain current subject to the company maintaining its system to the required standard. This will be monitored regularly by Alcumus ISOQAR. Further clarification regarding the scope of this certificate and the applicability of the relevant standards' requirement may be obtained by consulting Alcumus ISOQAR

Alcumus ISOQAR Limited, Cobra Court, 1 Blackmore Road, Stretford, Manchester M32 0QY.

T: 0161 865 3699 **E:** isoqarenquiries@alcumus.com **W:** alcumus.com/isoqar

This certificate is the property of Alcumus ISOQAR and must be returned on request.

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Flowtech

having demonstrated that they produce hose assemblies to a standard set by the BFPA have been awarded the British Fluid Power Association Seal of Approval for the production of hose assemblies.

INSPECTION DATE: 25th February 2022

VALID UNTIL: 25th February 2024

SIGNED:



Martin Kingsbury, Membership & Training Director



This award certifies that at the time of inspection the above company's production of hose assemblies was to the standards recommended by the BFPA but is not a quality guarantee of the hose assemblies.



British Fluid Power Association,
Cheriton House, Cromwell Park,
Chipping Norton,
Oxfordshire, OX7 5SR

Tel: +44 (0)1608 647900

Fax: +44 (0)1608 647919

Email: enquiries@bfpa.co.uk

Web: www.bfpa.co.uk





In Reply Refer To:
MSHA:A&CC:PAR 98670
Record File No.IC-267/1

November 30, 2010

MSHA reviewed your application for acceptance of compound number 171 for use as yellow air hose cover.

This construction and the information provided meet the requirements of the Standard Application Procedures for Acceptance of Flame-Resistant Solid Products Taken into Mines.

The following requirements apply to this acceptance:

1. Acceptance Marking No. "**MSHA IC-267/1**" must be permanently marked on the product with letters at least 1/4" high and at intervals not exceeding 3 feet. Other types of permanent markings may be used with prior approval of MSHA.
2. The accepted material thickness is 2 mm $\pm$ 0.2 mm.
3. You are obligated, as the manufacturer, to maintain the quality of the product to assure the requirements of this acceptance are being met.
4. Any change in product composition or in any other factors that may affect this acceptance must not be made without prior authorization from MSHA.
5. We have the right to revoke this acceptance for cause at any time.
6. We must be notified of any transfer of production or ownership of this product.

An invoice for the cost of processing this action will be forthcoming.

If you have any comments or questions relative to this letter, please refer them to David Creamer at 304-547-2085.

Sincerely,

A handwritten signature in cursive script, reading "John P. Faini".

John P. Faini
Chief, Approval and Certification Center



In Reply Refer To:
MSHA:A&CC:PAR 98669
Record File No.IC-267

November 23, 2010

MSHA reviewed your application for acceptance of black compound number 080 for use as hydraulic hose cover.

This construction and the information provided meet the requirements of the Standard Application Procedures for Acceptance of Flame-Resistant Solid Products Taken into Mines.

The following requirements apply to this acceptance:

1. Acceptance Marking No. "**MSHA IC-267**" must be permanently marked on the product with letters at least 1/4" high and at intervals not exceeding 3 feet. Other types of permanent markings may be used with prior approval of MSHA.
2. The accepted material thickness is 2 mm $\pm$ 0.2 mm.
3. You are obligated, as the manufacturer, to maintain the quality of the product to assure the requirements of this acceptance are being met.
4. Any change in product composition or in any other factors that may affect this acceptance must not be made without prior authorization from MSHA.
5. We have the right to revoke this acceptance for cause at any time.
6. We must be notified of any transfer of production or ownership of this product.

An invoice for the cost of processing this action will be forthcoming.

If you have any comments or questions relative to this letter, please refer them to David Creamer at 304-547-2085.

Sincerely,

A handwritten signature in cursive script, reading "John P. Faini".

John P. Faini
Chief, Approval and Certification Center