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AS153

FEDERAL SUPPLY CLASS  
4720

RATIONALE

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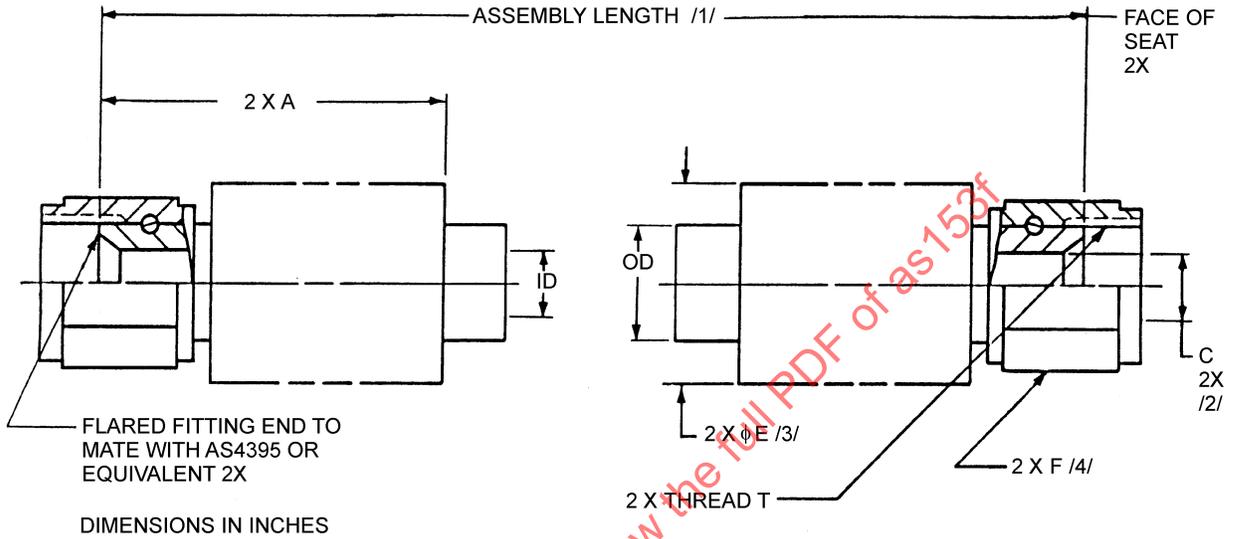


FIGURE 1 - HOSE AND FITTING DIMENSIONS

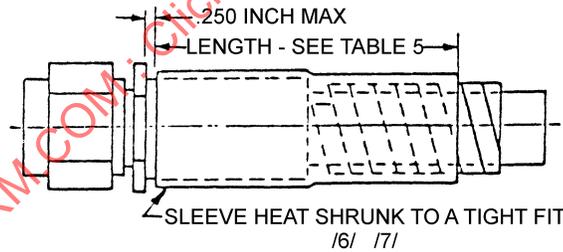


FIGURE 2 - TUBULAR/COIL ABRASION END

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ISSUED 1979-02 REVISED 2003-02 REAFFIRMED 2007-07

CUSTODIAN: SAE G-3/G-3D

PROCUREMENT SPECIFICATION: AS1339 /20/

**SAE Aerospace**  
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**AEROSPACE STANDARD**

HOSE ASSEMBLY, PTFE, CRES REINFORCED,  
3000 PSI, 400 °F, STRAIGHT TO STRAIGHT,  
FLARED, LIGHTWEIGHT

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TABLE 1 - ASSEMBLY DIMENSIONS

HOSE ASSEMBLY AS153 SIZE CODE		SIZE	THREAD T PER AS8879	ID MIN (REF)	A MAX	C /2/ DIA MIN	E /3/ DIA MAX WITHOUT SLEEVING	F HEX (REF)
04	.250	.4375-20 UNJF-3B	.212	1.30	.135	.69	.56	
06	.375	.5625-18 UNJF-3B	.298	1.48	.240	.80	.69	
08	.500	.7500-16 UNJF-3B	.391	1.69	.340	.97	.88	
10	.625	.8750-14 UNJF-3B	.485	1.77	.410	1.11	1.00	
12	.750	1.0625-12 UNJ-3B	.602	1.99	.510	1.38	1.25	
16	1.000	1.3125-12 UNJ-3B	.852	2.35	.760	1.66	1.50	

TABLE 2 - HOSE AND SLEEVE OUTSIDE DIAMETER

SLEEVE CODE	SLEEVE MATERIAL	TEMP. LIMIT °F	TOLE-RANCE	HOSE OR SLEEVE OUTSIDE DIAMETER		HOSE OR SLEEVE OUTSIDE DIAMETER		HOSE OR SLEEVE OUTSIDE DIAMETER	
				HOSE SIZE /5/	HOSE SIZE /5/	HOSE SIZE /5/	HOSE SIZE /5/	HOSE SIZE /5/	HOSE SIZE /5/
-	(-) INDICATES HOSE ONLY, NO SLEEVE (SEE AS1339)	400	MAX MIN	.250	.375	.500	.625	.750	1.000
A	ABRASION SLEEVE TUBULAR (TFE-AS1291-CODE B) /6/	400	MAX MIN	.500 .440	.600 .540	.730 .670	.840 .780	1.110 1.050	1.400 1.340
B	ABRASION SLEEVE COIL (NYLON AS1294) /7/	275	MAX MIN	.450 .390	.550 .490	.695 .635	.810 .750	1.080 1.020	1.360 1.300
C	FIRE SLEEVE (AS1072 SIL-FG) (15 min) /8/ /9/ /13/	400	MAX MIN	.625 .500	.750 .625	.875 .750	1.000 .875	1.250 1.125	1.500 1.375
D	ABRASION SLEEVE INTEGRAL SILICONE COMPOSITE /10/ /14/	350	MAX MIN	.500 .460	.600 .560	.700 .660	.830 .790	1.120 1.070	1.400 1.350
E	ABRASION SLEEVE SHRINK-ON (FEP) /11/	350	MAX MIN	.424 .374	.540 .480	.665 .615	.790 .730	1.070 1.010	1.350 1.290
F	ABRASION SLEEVE SHRINK-ON (POLYOLEFIN AS1073 - CODE B) /11/	275	MAX MIN	.450 .400	.560 .505	.695 .645	.810 .750	1.080 1.020	1.360 1.300
G	FIRE SLEEVE (AS1072 SIL-FG) (5 min) /8/ /9/ /12/	400	MAX MIN	.625 .500	.750 .625	.875 .750	1.000 .875	1.250 1.125	1.500 1.375
H	FIRE SLEEVE INTEGRAL SILICONE (15 min) /13/	400	MAX MIN	.660 .600	.745 .685	.895 .835	1.005 .945	1.240 1.160	1.515 1.455
J	FIRE SLEEVE INTEGRAL SILICONE (5 min) /12/	400	MAX MIN	.660 .600	.745 .685	.895 .835	1.005 .945	1.240 1.160	1.515 1.455
K	INTEGRAL ABRASION SLEEVE (BRAIDED) POLYESTER /10/	300	MAX MIN	.490 .444	.570 .535	.695 .650	.800 .760	1.070 1.030	1.350 1.310
L	ABRASION SLEEVE COIL (PTFE-AS1293) /7/	400	MAX MIN	.500 .440	.600 .540	.730 .670	.862 .802	1.110 1.050	1.400 1.340

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TABLE 3 - ASSEMBLY LENGTH TOLERANCE

HOSE ASSEMBLY LENGTH	TOLERANCE
UNDER 18 in	±.125 in
18 TO 36 in EXCLUSIVE	±.250 in
36 TO 50 in EXCLUSIVE	±.500 in
50 in AND OVER	±1%

TABLE 4 - WEIGHT

HOSE OR SLEEVE CODE	HOSE OR TYPE SLEEVE	UNITS	MAXIMUM WEIGHT					
			HOSE SIZE .250	HOSE SIZE .375	HOSE SIZE .500	HOSE SIZE .625	HOSE SIZE .750	HOSE SIZE 1.000
-	HOSE ONLY	LB/IN	.009	.015	.020	.027	.058	.085
A	ABRASION SLEEVE (TFE-AS1291-CODE B)	LB/IN	.003	.004	.004	.005	.007	.009
B	ABRASION SLEEVE (NYLON AS1294)	LB/IN	.001	.002	.003	.003	.004	.005
C	FIRESLEEVE (15 min) AS1072	LB/IN	.007	.009	.011	.012	.017	.021
D	ABRASION SLEEVE INTEGRAL WITH HOSE	LB/IN	.012	.016	.024	.034	.067	.110
E	ABRASION SLEEVE (FEP)	LB/IN	.002	.003	.003	.005	.006	.007
F	ABRASION SLEEVE (AS1073-CODE B)	LB/IN	.002	.003	.003	.004	.005	.006
G	FIRESLEEVE (5 min) AS1072	LB/IN	.007	.009	.011	.012	.017	.021
H	FIRESLEEVE INTEGRAL (15 min) WITH HOSE	LB/IN	.019	.027	.035	.047	.099	.117
J	FIRESLEEVE INTEGRAL (5 min) WITH HOSE	LB/IN	.019	.027	.035	.047	.099	.117
K	ABRASION SLEEVE POLYESTER WITH HOSE	LB/IN	.012	.016	.022	.030	.060	.090
L	ABRASION SLEEVE (PTFE-AS1293)	LB/IN	.003	.004	.005	.005	.006	.007
NONE	FIRESLEEVE CLAMP	LB/EA	.025	.025	.025	.026	.026	.026
NONE	FITTING END (HOSE SIZE - STRAIGHT)	LB/EA	.063	.106	.181	.260	.438	.650

TABLE 5 - SLEEVE LENGTH

HOSE SIZE	LENGTH (INCHES)
04 06	2.00 ± .25
08 10	2.50 ± .25
12 16	3.00 ± .25

TABLE 6 - SPHERICAL BALL SIZE FOR DETERMINING MINIMUM HOSE ASSEMBLY ID /2/

HOSE SIZE	STRAIGHT FITTING
04	.122
06	.216
08	.306
10	.369
12	.459
16	.684

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NOTES:

- /1/ LENGTH "L" IS A FOUR DIGIT NUMBER OF WHICH THE FIRST THREE DIGITS DESCRIBE THE HOSE ASSEMBLY LENGTH IN WHOLE INCHES, AND THE FOURTH DIGIT, THE FRACTION OF AN INCH IN EIGHTHS. LENGTH "L" IS MEASURED FROM "FACE OF SEAT" TO "FACE OF SEAT." FOR LENGTH TOLERANCES SEE TABLE 3.
- /2/ HOSE ASSEMBLY INSIDE DIAMETER SHALL BE VERIFIED BY PASSING THE DESIGNATED, OR LARGER, SPHERICAL BALL PER TABLE 6 THROUGH THE HOSE ASSEMBLY.
- /3/ DISTANCE ACROSS CORNERS OF THE COUPLING NUT MAY EXCEED THIS DIMENSION.
- /4/ STANDARD COUPLING NUTS SHALL BE IN ACCORDANCE WITH AN818 OR AS4730 AND MATE WITH AS4395 FLARED FITTING ENDS. NONSTANDARD COUPLING NUTS MAY BE USED, PROVIDED THEY ARE DIMENSIONALLY AND FUNCTIONALLY EQUIVALENT, AND PROVIDED THEY CANNOT BE REMOVED FROM THE FITTING. NUTS SHALL MEET TORQUE TEST REQUIREMENTS PER AS1339.
- /5/ DIAMETERS ARE LISTED FOR CLAMP SELECTION. TUBULAR SLEEVES MAY NOT BE A PERFECT ROUND AND SHALL BE MEASURED WITH A DIAMETER TAPE RULE (OFTEN REFERRED TO AS A PI-TAPE).
- /6/ TUBULAR ABRASION (TFE) SLEEVES SHALL HAVE AN ID NO GREATER THAN HOSE OD + .05 in. AXIAL MOVEMENT OF THE SLEEVE INSTALLED ON THE HOSE SHALL NOT EXCEED .05 in. ENDS OF THE TUBULAR SLEEVE SHALL BE TERMINATED WITH A LENGTH OF AMS-DTL-23053/11 (FEP) CLASS 1 OR 2, COLOR CLEAR, PER TABLE 5 FIGURE 2.
- /7/ COIL ABRASION SLEEVES, WHEN ASSEMBLED ON A STRAIGHT HOSE, SHALL HAVE AN AVERAGE GAP BETWEEN COILS NOT EXCEEDING .05 in. DISPLACEMENT OF THE COILS OF THE SLEEVE, CAUSING A GREATER GAP, SHALL NOT BE CAUSE FOR REJECTION IF THE COILS CAN BE REPOSITIONED TO MEET THE GAP REQUIREMENTS. ENDS OF THE COIL SLEEVE SHALL BE TERMINATED WITH A LENGTH OF HEAT SHRINKABLE SLEEVING IN ACCORDANCE WITH TABLE 5 AND FIGURE 2. CODE "B" (NYLON COIL) ABRASION SLEEVES SHALL BE TERMINATED WITH AMS-DTL-23053/5 CLASS 1 OR 3, COLOR BLACK. CODE "L" (COIL ABRASION) SLEEVES SHALL BE TERMINATED WITH AMS-DTL-23053/12, CLASS 1, COLOR TRANSPARENT, PTFE (OPTIONAL AMS-DTL-23053/11 (FEP) CLASS 1 OR 2, COLOR CLEAR).
- /8/ THE TABLE 2 SLEEVE DIAMETERS FOR AS1072 SLEEVES APPLY WHEN THE SLEEVE IS COMPRESSED, OR CLAMPED, TO CONTACT THE HOSE. IN THIS CASE A WRINKLE MAY OCCUR OVER APPROXIMATELY 10% OF THE SLEEVE CIRCUMFERENCE.
- /9/ THE CUT ENDS OF THE FIRESLEEVE SHALL BE COATED WITH RTV SILICONE RUBBER, PRIOR TO INSTALLATION, TO PREVENT WICKING OF FLUIDS. THE FIRESLEEVE ENDS SHALL BE SECURED TO THE HOSE ASSEMBLY END FITTINGS WITH CORROSION RESISTANT STEEL BANDS. AFTER INSTALLATION, CRACKS OR VOIDS IN THE FIRESLEEVE, WHICH EXPOSE THE FIBERGLASS, SHALL BE COATED WITH RTV SILICONE RUBBER.
- /10/ INTEGRAL ABRASION SLEEVE SHALL FORM AN INTEGRAL, PERMANENT PART OF THE HOSE AND SHALL TERMINATE A MAXIMUM OF .200 in FROM THE END OF THE COLLAR.
- /11/ FEP AND POLYOLEFIN SHRINK ABRASION SLEEVES SHALL BE SHRUNK TO A SNUG FIT OVER THE HOSE AND END FITTING COLLARS.
- /12/ ADD "AS1055 TYPE IIb CLASS A-S/P" OR "AS150 TYPE IX bA" TO IDENTIFICATION MARKING TO SHOW LEVEL OF COMPLIANCE, "FIRE RESISTANT" (5 min), WITH AS1055.
- /13/ ADD "AS1055 TYPE IIb CLASS B-S/P" OR "AS150 TYPE IX bB" TO IDENTIFICATION MARKING TO SHOW LEVEL OF COMPLIANCE, "FIRE PROOF" (15 min), WITH AS1055.
- /14/ SLEEVES CODED "D" ARE INACTIVE FOR FUTURE DESIGN AND SUPERSEDED BY CODE "K", AS OF THE RELEASE DATE OF REVISION "A" OF THIS STANDARD.
15. CONSTRUCTION AND PERFORMANCE: AS1339. FITTINGS SHALL BE PERMANENTLY ATTACHED TO THE HOSE.
16. OPERATING CHARACTERISTICS: SEE AS1339.
17. MATERIALS:
  - a. HOSE AND FITTINGS: PER AS1339.
  - b. SLEEVES: SEE APPLICABLE STANDARD, TABLE 2.
18. MARKING: MARKING SHALL BE PER AS1339 ON A STAINLESS STEEL BAND NOT OVER 1.0 in WIDE, OR ON THE COLLAR. THE CHARACTERS SHALL BE A MINIMUM OF .06 in HIGH. THE BAND SHALL BE SO DESIGNED AS TO REMAIN TIGHT ON THE HOSE TO PREVENT RELATIVE MOVEMENT AND RESULTANT CHAFING. IT SHALL BE OF SUFFICIENT STRENGTH TO PREVENT REMOVAL BY HAND. HOSE ASSEMBLY DATE AND "PT" SYMBOL SHALL BE PERMANENTLY MARKED ON THE BAND OR ON AN END FITTING OR A FIRESLEEVE CLAMP.