

REV.  
C

AS1909

FEDERAL SUPPLY CLASS  
4720

# RATIONALE

AS1909C HAS BEEN REAFFIRMED TO COMPLY WITH THE SAE FIVE-YEAR REVIEW POLICY.

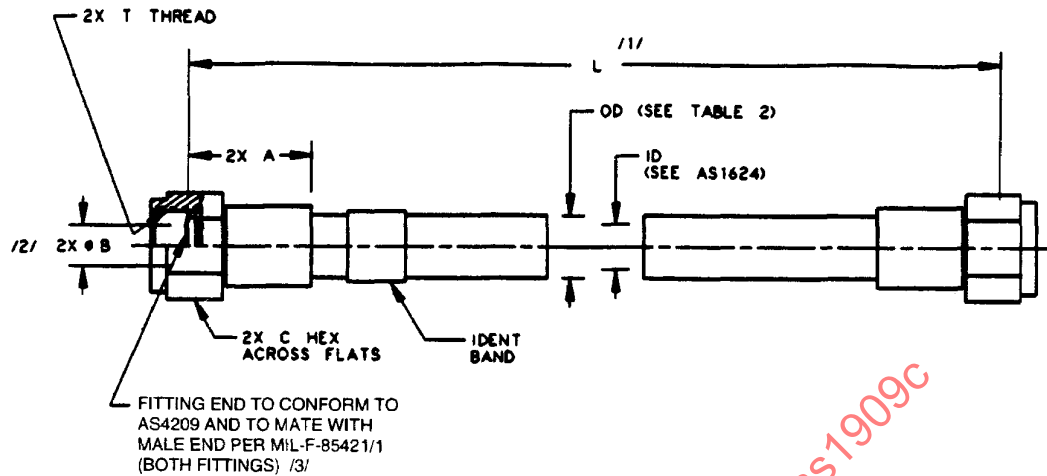


FIGURE 1 - HOSE AND FITTING DIMENSIONS

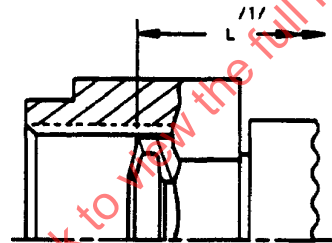


FIGURE 2 - FITTINGS  
(ENLARGED VIEW)

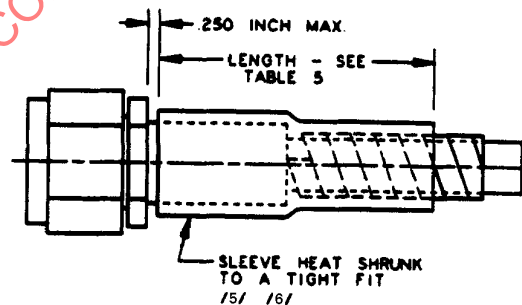
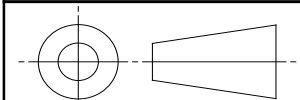


FIGURE 3 - ABRASION SLEEVE RETENTION

SAE values your input. To provide feedback on this Technical Report, please visit <http://www.sae.org/technical/standards/AS1909C>

THIRD ANGLE PROJECTION



CUSTODIAN: G-3/G-3D

PROCUREMENT SPECIFICATION: /13/ AS1339



## AEROSPACE STANDARD

(R) HOSE ASSEMBLY, POLYTETRAFLUOROETHYLENE, CRES REINFORCED, 400 °F, 3000 PSI, LIGHTWEIGHT, BEAM SEAL, STRAIGHT TO STRAIGHT

AS1909  
SHEET 1 OF 5

REV.  
C

TABLE 1- HOSE AND FITTING DIMENSIONS

| HOSE<br>ASSEMBLY<br>NO. AND<br>SIZE CODE | SIZE<br>REF | THREAD T<br>PER MIL-S-8879<br>REF | A<br>MAX | B /2/<br>DIA<br>MIN | C<br>HEX<br>REF |
|------------------------------------------|-------------|-----------------------------------|----------|---------------------|-----------------|
| AS1909-04                                | .250        | .4375-24UNJS-3B                   | 1.30     | .135                | .56             |
| AS1909-06                                | .375        | .5625-20UNJS-3B                   | 1.44     | .240                | .69             |
| AS1909-08                                | .500        | .7188-20UNJS-3B                   | 1.60     | .340                | .88             |
| AS1909-10                                | .625        | .8438-18UNJS-3B                   | 1.70     | .410                | 1.00            |
| AS1909-12                                | .750        | 1.0000-16UNJ-3B                   | 1.85     | .510                | 1.125           |
| AS1909-16                                | 1.000       | 1.2500-14UNJS-3B                  | 2.18     | .760                | 1.50            |

TABLE 2 - HOSE OR SLEEVE OUTSIDE DIAMETERS

| SLEEVE<br>CODE | SLEEVE MATERIAL                                                   | TEMP.<br>LIMIT<br>°F | HOSE OR<br>SLEEVE<br>OUTSIDE<br>DIAMETERS<br>(MAX-MIN)<br>/4/<br>.250 | HOSE OR<br>SLEEVE<br>OUTSIDE<br>DIAMETERS<br>(MAX-MIN)<br>/4/<br>.375 | HOSE OR<br>SLEEVE<br>OUTSIDE<br>DIAMETERS<br>(MAX-MIN)<br>/4/<br>.500 | HOSE OR<br>SLEEVE<br>OUTSIDE<br>DIAMETERS<br>(MAX-MIN)<br>/4/<br>.625 | HOSE OR<br>SLEEVE<br>OUTSIDE<br>DIAMETERS<br>(MAX-MIN)<br>/4/<br>.750 | HOSE OR<br>SLEEVE<br>OUTSIDE<br>DIAMETERS<br>(MAX-MIN)<br>/4/<br>1.000 |
|----------------|-------------------------------------------------------------------|----------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------|------------------------------------------------------------------------|
| -              | (-) INDICATES HOSE ONLY<br>NO SLEEVE (SEE AS1339)                 | 400                  | --                                                                    | --                                                                    | --                                                                    | --                                                                    | --                                                                    | --                                                                     |
| A              | ABRASION SLEEVE TUBULAR /5/<br>(TFE-AS1291-CODE B)                | 400                  | .500/.440                                                             | .600/.540                                                             | .730/.670                                                             | .840/.780                                                             | 1.110/1.050                                                           | 1.400/1.340                                                            |
| B              | ABRASION SLEEVE COIL /6/<br>(NYLON AS1294)                        | 275                  | .450/.390                                                             | .550/.490                                                             | .695/.635                                                             | .810/.750                                                             | 1.080/1.020                                                           | 1.360/1.300                                                            |
| C              | FIRE SLEEVE (AS1072 SIL-FG)<br>(15 min) /7/ /8/ /11/              | 400                  | .625/.500                                                             | .750/.625                                                             | .875/.750                                                             | 1.000/.875                                                            | 1.250/1.125                                                           | 1.500/1.375                                                            |
| E              | ABRASION SLEEVE SHRINK-ON<br>(FEP) (M23053/11) /10/               | 350                  | .424/.374                                                             | .540/.480                                                             | .665/.615                                                             | .790/.730                                                             | 1.070/1.010                                                           | 1.350/1.290                                                            |
| F              | ABRASION SLEEVE SHRINK-ON<br>(POLYOLEFIN AS1073 - CODE B)<br>/10/ | 275                  | .450/.400                                                             | .560/.505                                                             | .695/.645                                                             | .810/.750                                                             | 1.080/1.020                                                           | 1.360/1.300                                                            |
| H              | FIRE SLEEVE INTEGRAL SILICONE<br>(15 min) /11/ /12/               | 400                  | .660/.600                                                             | .745/.685                                                             | .895/.835                                                             | 1.005/.945                                                            | 1.240/1.160                                                           | 1.515/1.455                                                            |
| K              | INTEGRAL ABRASION SLEEVE /9/<br>(BRAIDED) POLYESTER               | 300                  | .490/.444                                                             | .570/.535                                                             | .695/.650                                                             | .800/.760                                                             | 1.070/1.030                                                           | 1.350/1.310                                                            |
| L              | ABRASION SLEEVE COIL /6/<br>(PTFE-AS1293)                         | 400                  | .500/.440                                                             | .600/.540                                                             | .730/.670                                                             | .862/.802                                                             | 1.110/1.050                                                           | 1.400/1.340                                                            |

TABLE 3 - HOSE ASSEMBLY LENGTH TOLERANCES

| 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%       |



## AEROSPACE STANDARD

(R) HOSE ASSEMBLY, POLYTETRAFLUOROETHYLENE,  
CRES REINFORCED, 400 °F, 3000 PSI, LIGHTWEIGHT,  
BEAM SEAL, STRAIGHT TO STRAIGHT

**AS1909**  
SHEET 2 OF 5

**REV.**  
**C**

TABLE 4 - WEIGHTS

| HOSE<br>OR<br>SLEEVE<br>CODE | HOSE OR TYPE SLEEVE                       | UNITS | REFERENCE<br>WEIGHT<br>LB/IN<br>/22/<br>HOSE<br>SIZE<br>.250 | REFERENCE<br>WEIGHT<br>LB/IN<br>/22/<br>HOSE<br>SIZE<br>.375 | REFERENCE<br>WEIGHT<br>LB/IN<br>/22/<br>HOSE<br>SIZE<br>.500 | REFERENCE<br>WEIGHT<br>LB/IN<br>/22/<br>HOSE<br>SIZE<br>.625 | REFERENCE<br>WEIGHT<br>LB/IN<br>/22/<br>HOSE<br>SIZE<br>.750 | REFERENCE<br>WEIGHT<br>LB/IN<br>/22/<br>HOSE<br>SIZE<br>1.000 |
|------------------------------|-------------------------------------------|-------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------------------------|
| -                            | HOSE ONLY                                 | LB/IN | .009                                                         | .015                                                         | .020                                                         | .027                                                         | .058                                                         | .085                                                          |
| A                            | ABRASION SLEEVE<br>(TFE-AS1291-B)         | LB/IN | .003                                                         | .004                                                         | .004                                                         | .005                                                         | .007                                                         | .009                                                          |
| B                            | ABRASION SLEEVE<br>(NYLON AS1294)         | LB/IN | .001                                                         | .002                                                         | .003                                                         | .003                                                         | .004                                                         | .005                                                          |
| C                            | FIRESLEEVE (15 min)<br>AS1072             | LB/IN | .007                                                         | .009                                                         | .011                                                         | .012                                                         | .017                                                         | .021                                                          |
| E                            | ABRASION SLEEVE<br>(FEP)                  | LB/IN | .002                                                         | .003                                                         | .003                                                         | .005                                                         | .006                                                         | .007                                                          |
| F                            | ABRASION SLEEVE<br>(AS1073B)              | LB/IN | .002                                                         | .003                                                         | .003                                                         | .004                                                         | .005                                                         | .006                                                          |
| H                            | FIRESLEEVE INTEGRAL<br>(15 min) ON HOSE   | LB/IN | .019                                                         | .027                                                         | .035                                                         | .047                                                         | .099                                                         | .117                                                          |
| K                            | ABRASION SLEEVE<br>POLYESTER WITH<br>HOSE | LB/IN | .012                                                         | .016                                                         | .022                                                         | .030                                                         | .060                                                         | .090                                                          |
| L                            | ABRASION SLEEVE<br>(PTFE-AS1293)          | LB/IN | .003                                                         | .004                                                         | .005                                                         | .005                                                         | .006                                                         | .007                                                          |
| NONE                         | FIRESLEEVE CLAMP<br>/22/                  | LB/EA | .025                                                         | .025                                                         | .025                                                         | .026                                                         | .026                                                         | .033                                                          |
| NONE                         | FITTING END<br>(STRAIGHT) /22/            | LB/EA | .060                                                         | .088                                                         | .142                                                         | .225                                                         | .355                                                         | .530                                                          |

TABLE 5 - SLEEVE LENGTHS

| HOSE SIZE  | LENGTH (in) |
|------------|-------------|
| .250/.375  | 2.00 ± .25  |
| .500/.625  | 2.50 ± .25  |
| .750/1.000 | 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             |

**AEROSPACE STANDARD**

(R) HOSE ASSEMBLY, POLYTETRAFLUOROETHYLENE,  
CRES REINFORCED, 400 °F, 3000 PSI, LIGHTWEIGHT,  
BEAM SEAL, STRAIGHT TO STRAIGHT

**AS1909**  
SHEET 3 OF 5

**REV.**  
**C**

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 OUTER CORNER OF SEALING SURFACE TO OUTER CORNER OF SEALING SURFACE AS SHOWN IN FIGURE 1. FOR LENGTH INCREMENTS AND TOLERANCES SEE TABLE 3.
- /2/ A TRUE CIRCULAR CROSS SECTION IS NOT REQUIRED THROUGH THE FITTING I.D. HOWEVER, THE APPLICABLE BALL DIAMETER LISTED IN TABLE 6 SHALL PASS THROUGH THE END FITTING AFTER IT IS ASSEMBLED TO THE HOSE.
- /3/ STANDARD COUPLING NUTS SHALL MATE WITH MIL-F-85421 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 EXCEPT TORQUE VALUES SHALL BE PER MIL-F-85421. THE THREAD AND ALL INTERNAL SURFACES SHALL BE DRY-FILM LUBRICATED WITH MIL-PRF-46010 TYPE I COATING. ALL EXTERIOR SURFACES MAY BE DRY-FILM COATED.
- /4/ DIAMETERS ARE LISTED FOR CLAMP SELECTION. TUBULAR SLEEVES MAY NOT BE A PERFECT ROUND AND SHALL BE MEASURED WITH A DIAMETER TAPE RULER (OFTEN REFERRED TO AS PI-TAPE).
- /5/ TUBULAR ABRASION (TFE) SLEEVES SHALL HAVE AN I.D. NO GREATER THAN HOSE O.D.  $\pm .05$  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 M23053/11 (FEP) CLASS 1 OR 2, COLOR CLEAR, PER TABLE 5 AND FIGURE 3.
- /6/ 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 3. CODE "B" (NYLON COIL) ABRASION SLEEVES SHALL BE TERMINATED WITH M23053/5, CLASS 1 OR 3, COLOR BLACK. CODE "L" (COIL ABRASION) SLEEVES SHALL BE TERMINATED WITH M23053/12, CLASS 1, COLOR TRANSPARENT, PTFE. (OPTIONAL M23053/11 (FEP) CLASS 1 OR 2, COLOR CLEAR.)
- /7/ THE TABLE 2 SLEEVE DIAMETERS FOR AS1072 SLEEVE APPLIES WHEN THE SLEEVE IS COMPRESSED, OR CLAMPED, TO CONTACT THE HOSE. IN THIS CASE A WRINKLE MAY OCCUR OVER THE SLEEVE CIRCUMFERENCE.
- /8/ 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.
- /9/ 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.
- /10/ FEP PER M23053/11 AND POLYOLEFIN PER AS1073-CODE B SHRINK ABRASION SLEEVES SHALL BE SHRUNK TO A SNUG FIT OVER THE HOSE AND END FITTING COLLARS.
- /11/ 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.
- /12/ THE ENDS OF THE INTEGRAL FIRESLEEVE AND FITTING SOCKET/COLLAR MAY BE COVERED WITH A SILICONE CUFF OR MOLDED AS REQUIRED TO COMPLY WITH /11/.
- /13/ THIS HOSE ASSEMBLY SHALL BE QUALIFIED IN ACCORDANCE WITH PROCUREMENT SPECIFICATION AS1339. USERS OF THIS STANDARD ARE ADVISED TO CONTROL SOURCE APPROVAL(S) BY STANDARD PAGE SUPPLEMENT SHEET OR SIMILAR MEANS.  
  
CHANGE-OVER FROM USER-QPL TO PRI-QPL SHALL BE PERFORMED IN ACCORDANCE WITH AS1339E AND COMPLETED BY MARCH 1, 2002. USERS OF THIS STANDARD SHALL PROCURE THE PRODUCT FROM ACCREDITED MANUFACTURERS, OR THEIR ACCREDITED DISTRIBUTORS, AS LISTED IN THE PERFORMANCE REVIEW INSTITUTE (PRI) QUALIFIED PRODUCTS LIST PRI-QPL-AS1339 FOR THIS STANDARD.
14. MATERIALS: HOSE AND FITTINGS - PER AS1339.
15. CONSTRUCTION AND PERFORMANCE: AS1339 FITTINGS SHALL BE PERMANENTLY ATTACHED TO THE HOSE.
16. OPERATING CHARACTERISTICS: SEE AS1339.
17. DIMENSIONING AND TOLERANCING: ANSI Y14.5M.
18. DIMENSIONS IN INCHES, UNLESS OTHERWISE SPECIFIED.  
TOLERANCES: LINEAR DIMENSIONS  $\pm .010$ , ANGULAR DIMENSIONS  $\pm 2^\circ$ .

|                                                                                     |                                                                                                                                   |                               |                         |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------|
|  | <b>AEROSPACE STANDARD</b>                                                                                                         | <b>AS1909</b><br>SHEET 4 OF 5 | <b>REV.</b><br><b>C</b> |
|                                                                                     | (R) HOSE ASSEMBLY, POLYTETRAFLUOROETHYLENE,<br>CRES REINFORCED, 400 °F, 3000 PSI, LIGHTWEIGHT,<br>BEAM SEAL. STRAIGHT TO STRAIGHT |                               |                         |