

AS4354

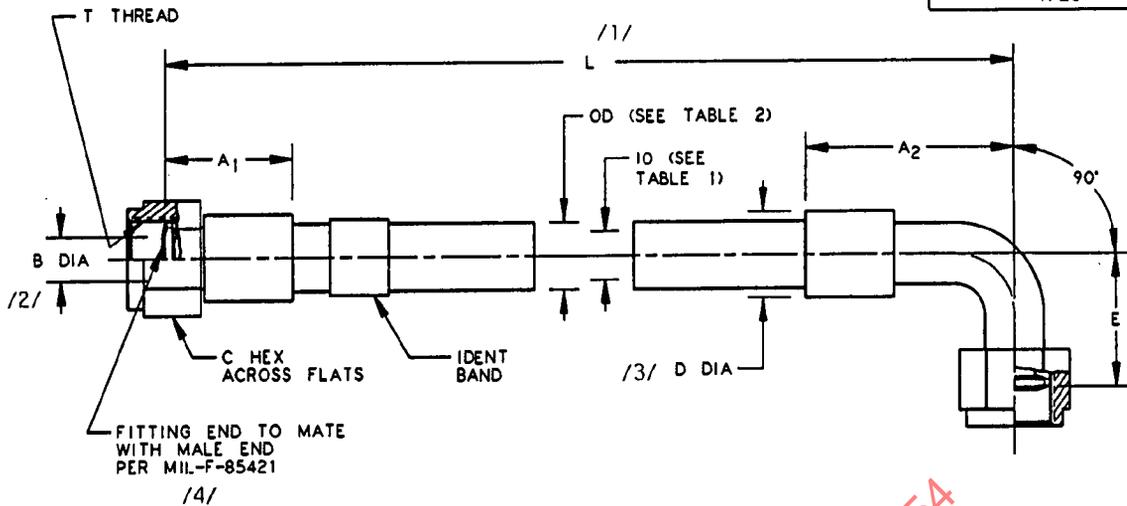


FIGURE 1A

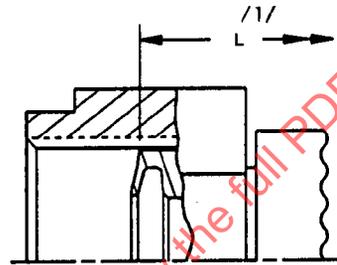


FIGURE 1B  
(ENLARGED VIEW)

TABLE 1

| HOSE ASSEMBLY | SIZE REF. | THREAD T PER MIL-S-8879 REF. | I.D. MIN. | A <sub>1</sub> MAX. | A <sub>2</sub> MAX. | B BALL SIZE MIN THRU DIA /2/ MS19059 DASH NO. | B BALL SIZE MIN THRU DIA /2/ DIA. IN. | C HEX. REF. | D /3/ DIA. MAX. WITHOUT SLEEVING | E MIN. | E MAX. |
|---------------|-----------|------------------------------|-----------|---------------------|---------------------|---|---------------------------------------|-------------|----------------------------------|--------|--------|
| AS4354-04     | 0.250     | 0.4375 - 24UNJS-3B           | 0.212     | 1.53                | 2.02                | 4807  | 0.109                                 | 0.56        | 0.88                             | 0.795  | 0.983  |
| AS4354-06     | 0.375     | 0.5625 - 20UNJS-3B           | 0.298     | 1.68                | 2.25                | 4812  | 0.188                                 | 0.69        | 1.00                             | 1.000  | 1.125  |
| AS4354-08     | 0.500     | 0.7188 - 20UNJS-3B           | 0.391     | 1.80                | 2.38                | 4816  | 0.313                                 | 0.88        | 1.20                             | 1.033  | 1.240  |
| AS4354-10     | 0.625     | 0.8438 - 18UNJS-3B           | 0.485     | 2.06                | 2.94                | 4818  | 0.375                                 | 1.00        | 1.41                             | 1.258  | 1.445  |
| AS4354-12     | 0.750     | 1.0000 - 16 UNJ-3B           | 0.602     | 2.15                | 3.57                | 4821  | 0.469                                 | 1.25        | 1.69                             | 1.530  | 1.954  |
| AS4354-16     | 1.000     | 1.2500 - 14UNJS-3B           | 0.852     | 2.62                | 4.10                | 4829  | 0.719                                 | 1.50        | 2.00                             | 1.860  | 2.681  |
| AS4354-20     | 1.250     | 1.5781 - 14UNJS-3B           | 1.101     | 2.52                | 4.13                | 4834  | 0.875                                 | 2.00        | 2.10                             | 2.002  | 2.220  |

ISSUED 1991-06-12 REVISED

CUSTODIAN: G-3/G-3D

PROCUREMENT SPECIFICATION AS604

**SAE** The Engineering Society  
For Advancing Mobility  
Land Sea Air and Space  
**INTERNATIONAL**

400 Commonwealth Drive, Warrendale, PA 15096-0001

**AEROSPACE STANDARD**

HOSE ASSEMBLY, POLYTETRAFLUOROETHYLENE,  
CRES REINFORCED, 400°F, 3000 PSI,  
HEAVYWEIGHT, BEAM SEAL, STRAIGHT TO 90°

**AS4354**

SHEET 1 OF 6

SAE Technical Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and the applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user." SAE reviews each technical report at least every five years at which time it may be reaffirmed, revised, or cancelled. SAE invites your written comments and suggestions.

TABLE 2

| SLEEVE CODE | SLEEVE MATERIAL   | TEMP. LIMIT °F | HOSE OR SLEEVE OUTSIDE DIAMETER (MAX-MIN) /5/ |                | HOSE OR SLEEVE OUTSIDE DIAMETER (MAX-MIN) /5/ |                | HOSE OR SLEEVE OUTSIDE DIAMETER (MAX-MIN) /5/ |                | HOSE OR SLEEVE OUTSIDE DIAMETER (MAX-MIN) /5/ |           | HOSE OR SLEEVE OUTSIDE DIAMETER (MAX-MIN) /5/ |           |
|-------------|---|----------------|---|----------------|---|----------------|---|----------------|---|-----------|---|-----------|
|             |   |                | HOSE SIZE                                     | HOSE SIZE      | HOSE SIZE                                     | HOSE SIZE      | HOSE SIZE                                     | HOSE SIZE      | HOSE SIZE                                     | HOSE SIZE | HOSE SIZE                                     | HOSE SIZE |
| -           | (-) INDICATES HOSE ONLY, NO SLEEVE                          | 400            | 0.465<br>0.395                                | 0.595<br>0.535 | 0.735<br>0.675                                | 0.935<br>0.875 | 1.090<br>1.030                                | 1.410<br>1.350 | 1.650<br>1.560                                |           |   |           |
| A           | ABRASION SLEEVE TUBULAR (TFE-AS1291-CODE B)                 | 400 /6/        | 0.540<br>0.468                                | 0.715<br>0.615 | 0.855<br>0.770                                | 1.025<br>0.960 | 1.195<br>1.125                                | 1.515<br>1.445 | 1.825<br>1.755                                |           |   |           |
| B           | ABRASION SLEEVE COIL (NYLON AS1294)                         | 275 /7/        | 0.509<br>0.413                                | 0.684<br>0.584 | 0.809<br>0.721                                | 1.005<br>0.906 | 1.170<br>1.062                                | 1.492<br>1.257 | 1.750<br>1.690                                |           |   |           |
| C           | FIRE SLEEVE (AS1072 SIL-FG) (15 MIN) /8/ /9/ /13/           | 400            | 0.808<br>0.562                                | 0.875<br>0.750 | 1.058<br>0.875                                | 1.250<br>1.125 | 1.495<br>1.250                                | 1.750<br>1.590 | 2.000<br>1.875                                |           |   |           |
| E           | ABRASION SLEEVE SHRINK-ON (FEP) /11/                        | 350            | 0.520<br>0.417                                | 0.655<br>0.592 | 0.797<br>0.727                                | 0.995<br>0.927 | 1.160<br>1.086                                | 1.450<br>1.251 | 1.688<br>1.632                                |           |   |           |
| F           | ABRASION SLEEVE SHRINK-ON (POLYOLEFIN AS1073 - CODE B) /11/ | 275            | 0.520<br>0.440                                | 0.670<br>0.590 | 0.795<br>0.731                                | 0.997<br>0.920 | 1.174<br>1.086                                | 1.482<br>1.251 | 1.740<br>1.680                                |           |   |           |
| G           | FIRE SLEEVE (AS1072 SIL-FG) (5 MIN) /8/ /9/ /12/            | 400            | 0.808<br>0.562                                | 0.875<br>0.750 | 1.058<br>0.875                                | 1.250<br>1.125 | 1.495<br>1.250                                | 1.750<br>1.590 | 2.000<br>1.875                                |           |   |           |
| H           | FIRE SLEEVE INTEGRAL SILICONE (15 MIN) /14/ /13/            | 400            | 0.700<br>0.640                                | 0.880<br>0.820 | 1.000<br>0.940                                | 1.203<br>1.143 | 1.343<br>1.283                                | 1.656<br>1.596 | 1.906<br>1.846                                |           |   |           |
| J           | FIRE SLEEVE INTEGRAL SILICONE (5 MIN) /12/                  | 400            | 0.705<br>0.645                                | 0.880<br>0.820 | 1.005<br>0.945                                | 1.217<br>1.143 | 1.382<br>1.280                                | 1.748<br>1.593 | 1.906<br>1.846                                |           |   |           |
| K           | INTEGRAL ABRASION SLEEVE (BRAIDED) POLYESTER /10/           | 300            | 0.505<br>0.480                                | 0.675<br>0.645 | 0.795<br>0.765                                | 0.985<br>0.955 | 1.150<br>1.120                                | 1.470<br>1.440 | 1.740<br>1.680                                |           |   |           |
| L           | ABRASION SLEEVE COIL (PTFE-AS1293) /7/                      | 400            | 0.522<br>0.449                                | 0.692<br>0.605 | 0.831<br>0.747                                | 1.015<br>0.937 | 1.172<br>1.086                                | 1.492<br>1.281 | 1.750<br>1.690                                |           |   |           |

TABLE 3

| HOSE ASSY LENGTH | AVAILABLE INCREMENTS       | TOLERANCE                  |
|------------------|----------------------------|----------------------------|
| UNDER 18 INCHES  | (NOT LESS THAN) 0.125 INCH | (PLUS OR MINUS) 0.125 INCH |
| 18 TO 36 INCHES  | (NOT LESS THAN) 0.250 INCH | (PLUS OR MINUS) 0.250 INCH |
| 36 TO 50 INCHES  | (NOT LESS THAN) 0.500 INCH | (PLUS OR MINUS) 0.500 INCH |
| OVER 50 INCHES   | (NOT LESS THAN) 1.000 INCH | (PLUS OR MINUS) 1 PERCENT  |

TABLE 4

| HOSE OR SLEEVE CODE | HOSE OR TYPE SLEEVE                   | UNITS     | 0.250                      |           | 0.375                      |           | 0.500                      |           | 0.625                      |           | 0.750                      |           | 1.000                      |           | 1.250                      |           |
|---------------------|---------------------------------------|-----------|----------------------------|-----------|----------------------------|-----------|----------------------------|-----------|----------------------------|-----------|----------------------------|-----------|----------------------------|-----------|----------------------------|-----------|
|                     |                                       |           | MAXIMUM WEIGHT LB/INCH (*) | HOSE SIZE |
| -                   | HOSE ONLY                             | LB/IN     | 0.012                      |           | 0.028                      |           | 0.040                      |           | 0.062                      |           | 0.086                      |           | 0.140                      |           | 0.154                      |           |
| A                   | ABRASION SLEEVE (TFE-AS1291-B)        | LB/IN     | 0.003                      |           | 0.004                      |           | 0.004                      |           | 0.005                      |           | 0.007                      |           | 0.009                      |           | 0.011                      |           |
| B                   | ABRASION SLEEVE (NYLON AS1294)        | LB/IN     | 0.001                      |           | 0.002                      |           | 0.003                      |           | 0.003                      |           | 0.004                      |           | 0.005                      |           | 0.007                      |           |
| C                   | FIRE SLEEVE (15 MIN) AS1072           | LB/IN     | 0.007                      |           | 0.010                      |           | 0.011                      |           | 0.015                      |           | 0.017                      |           | 0.021                      |           | 0.025                      |           |
| E                   | ABRASION SLEEVE (FEP)                 | LB/IN     | 0.002                      |           | 0.003                      |           | 0.003                      |           | 0.005                      |           | 0.006                      |           | 0.007                      |           | 0.009                      |           |
| F                   | ABRASION SLEEVE (AS1073B)             | LB/IN     | 0.002                      |           | 0.003                      |           | 0.003                      |           | 0.004                      |           | 0.005                      |           | 0.006                      |           | 0.008                      |           |
| G                   | FIRE SLEEVE (5 MIN) AS1072            | LB/IN     | 0.007                      |           | 0.010                      |           | 0.011                      |           | 0.015                      |           | 0.017                      |           | 0.021                      |           | 0.025                      |           |
| H                   | FIRE SLEEVE INTEGRAL (15 MIN) ON HOSE | LB/IN     | 0.022                      |           | 0.042                      |           | 0.056                      |           | 0.081                      |           | 0.102                      |           | 0.154                      |           | 0.190                      |           |
| J                   | FIRE SLEEVE INTEGRAL (5 MIN) ON HOSE  | LB/IN     | 0.022                      |           | 0.042                      |           | 0.056                      |           | 0.081                      |           | 0.102                      |           | 0.154                      |           | 0.190                      |           |
| K                   | ABRASION SLEEVE POLYESTER WITH HOSE   | LB/IN     | 0.013                      |           | 0.028                      |           | 0.039                      |           | 0.060                      |           | 0.082                      |           | 0.130                      |           | 0.160                      |           |
| L                   | ABRASION SLEEVE (PTFE-AS1293)         | LB/IN     | 0.003                      |           | 0.004                      |           | 0.005                      |           | 0.005                      |           | 0.006                      |           | 0.007                      |           | 0.009                      |           |
| NONE                | FIRE SLEEVE CLAMP                     | (*) LB/EA | 0.020                      |           | 0.020                      |           | 0.025                      |           | 0.026                      |           | 0.026                      |           | 0.033                      |           | 0.038                      |           |
| NONE                | FITTING END (STRAIGHT)                | (*) LB/EA | 0.085                      |           | 0.115                      |           | 0.170                      |           | 0.260                      |           | 0.375                      |           | 0.540                      |           | 1.200                      |           |
| NONE                | FITTING END (90°)                     | (*) LB/EA | 0.089                      |           | 0.160                      |           | 0.235                      |           | 0.310                      |           | 0.460                      |           | 0.735                      |           | 1.330                      |           |

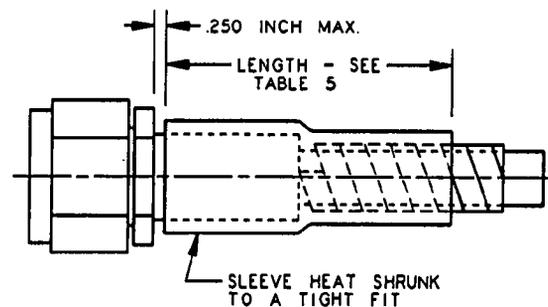
(\*)NOTE: FIRE SLEEVE CLAMP AND FITTING END ARE IN LB EACH

## FLAG 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 AS SHOWN IN FIGURE 1B FOR STRAIGHT FITTINGS TO THE CENTERLINE OF THE ELBOW FOR 90° FITTINGS. 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 1 SHALL PASS THROUGH THE END FITTING AFTER IT IS ASSEMBLED TO THE HOSE.
- /3/ DISTANCE ACROSS CORNERS OF THE COUPLING NUT MAY EXCEED THIS DIMENSION.
- /4/ 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 AS604 EXCEPT TORQUE VALUES SHALL BE PER MIL-F-85421.
- /5/ 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).
- /6/ TUBULAR ABRASION (TFE) SLEEVES SHALL HAVE AN I.D. NO GREATER THAN HOSE O.D. +0.05 in. AXIAL MOVEMENT OF THE SLEEVE INSTALLED ON THE HOSE SHALL NOT EXCEED 0.05 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 2.
- /7/ COIL ABRASION SLEEVES, WHEN ASSEMBLED ON A STRAIGHT HOSE, SHALL HAVE AN AVERAGE GAP BETWEEN COILS NOT EXCEEDING 0.05 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 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.)

TABLE 5

| HOSE SIZE | LENGTH (INCHES) |
|-----------|-----------------|
| 0.250     | 2.00 ± 0.25     |
| 0.375     | 2.00 ± 0.25     |
| 0.500     | 2.50 ± 0.25     |
| 0.625     | 2.50 ± 0.25     |
| 0.750     | 3.00 ± 0.25     |
| 1.000     | 3.00 ± 0.25     |
| 1.250     | 3.50 ± 0.25     |



/6/ /7/

FIGURE 2