

FED. SUP CLASS

2620

THE TIRE SHALL BE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF SPECIFICATION MIL-T-5041 EXCEPT AS SPECIFIED HEREIN

SIZE	FLY RATING	STATIC LOAD RATING LBS.	VERT. LOAD LBS.	INFL. PRESS. PSI RATED	BURST PRESS. PSI MIN.	BEAD WIDTH IN. MAX.	WEIGHT LBS. MAX.	STATIC UNBAL ±1/2 OZ.	TREAD	MOLD SKID DEPTH MIN.	DEFLEC +3% -4%
30x11.50-14.50	1/26TL	25,000	168,000	245	1400 2/	2.75	89.0	19	3/RIB	.30	35%

1/ TL TUBELESS

2/ NEW TIRE

3/ AT LEAST FOUR, BUT NOT MORE THAN SEVEN RIBS. THE TREAD GROOVES SHALL BE SHAPED, INSOFAR AS PRACTICABLE TO PREVENT FOREIGN OBJECTS FROM BEING TRAPPED BETWEEN THE RIBS. FABRIC REINFORCED TREAD.

TIRE AND RIM DATA: SEE FIGURE 1

THE TIRE COVERED BY THIS DRAWING SHALL BE SUITABLE FOR USE AND PROVIDE REASONABLE SERVICE LIFE DURING ALL NORMAL OPERATIONS AT TAKEOFF AND LANDING SPEEDS INDICATED HEREIN ON ALL TYPES OF RUNWAYS AND ON AIRCRAFT CARRIERS.

A MINIMUM OF SIX TIRES SHALL BE USED FOR QUALIFICATION. ALL TIRES SHALL BE BUILT USING THE SAME COMPOUNDS AND PROCESSING TECHNIQUES. THE TIRES SHALL BE EXAMINED AS FOLLOWS:

DIMENSIONS: ALL TIRES SHALL BE INFLATED TO OPERATING PRESSURE AND ALLOWED TO STAND 4 HOURS MINIMUM AT ROOM TEMPERATURE AFTER WHICH THE PRESSURE LOSS DUE TO GROWTH SHALL BE REPLACED. THE TIRE DIMENSIONS AT 475 PSI SHALL BE WITHIN THE LIMITS OF FIGURE 1. IN ADDITION, EACH OF THE TIRES USED FOR DYNAMIC TESTING SHALL BE MEASURED DURING THE ENVELOPE COMPLIANCE PORTION OF DYNAMIC TESTING TO DETERMINE GROWN AND THROWN COMPLIANCE (FIGURE 1).

TIRES 1,2,3 & 4: TIRES 1 AND 2 SHALL BE INFLATED TO GIVE A RATED DEFLECTION AT RATED LOAD. TIRES 3 AND 4 SHALL BE INFLATED TO 300 PSI. ALL TIRES SHALL CONSECUTIVELY WITHSTAND 21 CYCLES OF TEST A, 2 CYCLES OF TEST B, 2 CYCLES OF TEST C, 25 CYCLES OF TEST D, 1 CYCLE OF TEST E AND 1 CYCLE OF TEST F IN THAT ORDER.

PHOTOGRAPHIC PROOF OR PHOTOS OF AN ACCURATE MEASURING DEVICE SHOWING ENVELOPE COMPLIANCE (FIGURE 1) SHALL BE OBTAINED AS FOLLOWS:

- PRIOR TO START OF TEST, BUT AFTER TIRE HAS BEEN INFLATED AND MAINTAINED AT SPECIFIED INFLATION PRESSURE FOR 24 HOURS.
- AFTER 5 CYCLES OF TEST A.
- AFTER EVERY 16 CYCLES THEREAFTER.
- AFTER COMPLETION OF ENTIRE TEST SPECTRUM.

THE TIRE SHALL SHOW NO EVIDENCE OF SLIPPAGE THAT WOULD DAMAGE THE AIR SEAL BETWEEN THE TIRE AND RIM.

NOTE: FAILURE OF ANY TIRE AT ANY POINT OF THE ABOVE TEST SPECTRUM WILL DISQUALIFY ALL TIRES PREVIOUSLY TESTED. THIS PROCEDURE SHALL BE FOLLOWED UNTIL 4 CONSECUTIVE TIRES SUCCESSFULLY COMPLETE THE ABOVE TESTS.

TIRE 5: SHALL WITHSTAND TEST G, 10 CYCLES OF TEST A, 10 CYCLES OF TEST D, WITHSTAND TEST H AND THEN BE SUBJECTED TO THE HYDROSTATIC BURST TEST (TEST J).

TIRE 6: SHALL WITHSTAND TEST G, 25 CYCLES OF TEST I AND THEN BE SUBJECTED TO THE HYDROSTATIC BURST TEST (TEST J).

TEST A - NORMAL TAKEOFF - THE TIRE SHALL BE TAXIED ON THE FLYWHEEL AT 40 MPH FOR 9000 FEET WITH 25,000 POUNDS LOAD. UPON COMPLETION OF THE TAXI ROLL, THE FLYWHEEL SHALL BE STOPPED AND THEN IMMEDIATELY ACCELERATED AT AN AVERAGE RATE OF 11.88 FT/SEC/SEC FROM 0 MPH TO 230 MPH. THE TIRE SHALL BE UNLANDED AFTER A TAKEOFF ROLL DISTANCE OF 4750 FEET HAS BEEN COVERED IN APPROXIMATELY 28-29 SECONDS. THE INITIAL TAKEOFF LOAD OF 25,000 POUNDS SHALL BE DECREASED LINEARLY WITH TIME TO 24,250 POUNDS AT 15 SECONDS AFTER START OF ROLL, THEN LINEARLY DECREASED TO 20,000 POUNDS AT POINT OF LIFT-OFF.

TEST B - OVERLOAD TAKEOFF - THE TIRE SHALL BE TAXIED ON THE FLYWHEEL AT 40 MPH FOR 9000 FEET WITH 26,200 POUNDS LOAD. UPON COMPLETION OF THE TAXI ROLL, THE FLYWHEEL SHALL BE STOPPED AND THEN IMMEDIATELY ACCELERATED AT AN AVERAGE RATE OF 11.98 FT/SEC/SEC FROM 0 TO 236 MPH. TIRE SHALL BE UNLANDED AFTER A TAKEOFF ROLL OF 5000 FEET HAS BEEN COVERED IN APPROXIMATELY 28 TO 29 SECONDS. THE INITIAL LOAD OF 26,200 POUNDS SHALL BE DECREASED LINEARLY WITH TIME TO 25,500 POUNDS AT 14 SECONDS AFTER THE START OF THE ROLL, THEN FURTHER DECREASED TO 22,000 POUNDS AT THE POINT OF LIFT OFF.

(B) DENOTES CHANGES

P.A. NAVY - AS Other Cust	TITLE	MILITARY STANDARD
	TIRE, PNEUMATIC, AIRCRAFT 30x11.50-14.50, TYPE VIII(NAVY) FABRIC REINFORCED TREAD	MS14171 (AS)
PROCUREMENT SPECIFICATION MIL-T-5041	SUPERSEDES	SHEET 1 OF 4

REPRODUCTION PERMITTED & APPROVED FOR PUBLIC RELEASE. DISTRIBUTION IS UNLIMITED

This military standard is approved by NAVAL AIR SYSTEMS COMMAND, Department of the Navy and shall be used by their activity. All other military activities are required to comply with standard where suitable. AMSC N/A

APPROVED 22 DEC 76 (A) 18 SEP 80 (B) 31 JULY 87

DD FORM 672-1 (Limited circulation) 1 MAR 72

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

PROJECT NO. 2620-1257

PLATE NO. 2871

FED. SUP CLASS
2620

- TEST C - TAKEOFF AT 5000 FEET ALTITUDE ON A HOT DAY - THE TIRE SHALL BE TAXIED ON THE FLYWHEEL AT 40 MPH FOR 7000 FEET WITH 25,000 POUNDS LOAD. UPON COMPLETION OF THE TAXI ROLL THE FLYWHEEL SHALL BE STOPPED AND THEN IMMEDIATELY ACCELERATED AT AN AVERAGE RATE OF 8.95 FT/SEC/SEC FROM 0 MPH TO 247 MPH. THE TIRE SHALL BE UNLANDED AFTER A TAKEOFF ROLL DISTANCE OF 7300 FEET HAS BEEN COVERED IN APPROXIMATELY 40 TO 41 SECONDS. THE INITIAL LOAD (25,000 POUNDS) SHALL BE MAINTAINED FOR THE FIRST 7 SECONDS OF THE TAKEOFF ROLL THEN DECREASED LINEARLY WITH TIME TO 23,300 POUNDS AT 30 SECONDS AFTER THE START AND TO 20,000 POUNDS AT THE POINT OF LIFTOFF.
- TEST D - LANDING - THE TIRE SHALL BE LANDED AGAINST A FLYWHEEL ROTATING AT A PERIPHERAL SPEED OF 196 MPH. THE FLYWHEEL SPEED SHALL THEN BE DECREASED AT AN AVERAGE DECELERATION RATE OF 5.17 FT/SEC/SEC FROM 196 TO 0 MPH. THE LANDING ROLL DISTANCE OF 8000 FEET SHALL BE COVERED IN APPROXIMATELY 55 TO 56 SECONDS. THE INITIAL TIRE LOAD SHALL BE 17,500 POUNDS AT TOUCHDOWN THEN INCREASED LINEARLY TO 22,000 POUNDS AFTER 8000 FT. IMMEDIATELY FOLLOWING, THE TIRE SHALL BE TAXIED ON THE FLYWHEEL FOR 9000 FEET AT 40 MPH WITH 22,000 POUNDS LOAD. AFTER THE TAXI, THE 22,000 POUND LOAD SHALL BE MAINTAINED ON THE TIRE FOR A MINIMUM OF 15 MINUTES.
- TEST E - TAXI TO SIMULATE SIDE LOAD DURING TURNING - ONE CYCLE OF TEST "E" SHALL CONSIST OF 25 CYCLES OF "E₁" AND 25 CYCLES OF "E₂". THIS TEST SHALL CONSIST OF TAXI AT 35 MPH WITH THE TIRE LOADED IN A MANNER TO DUPLICATE THE LOADINGS OBTAINED DURING A .25G TURN. THE DISTANCE, VERTICAL AND SIDE LOADS SHALL BE AS SPECIFIED FOR EACH CONDITION. THE LOADING SHALL BE ACCOMPLISHED BY ROLLING THE WHEEL AT A YAW ANGLE RELATIVE TO THE DYNAMOMETER. VERIFICATION OF THE SPECIFIED LOADINGS IS REQUIRED. THE SIDE LOAD DEFLECTIONS SHALL BE RECORDED.

"E₁" - INBOARD YAW TEST (25 CYCLES)

1. LAND TIRE ON FLYWHEEL WITH A PRESELECTED YAW ANGLE WHICH WILL GIVE THE REQUIRED LOADING.
2. INCREASE THE LOADING ON THE TIRE WITH A RADIAL LOAD (IN THE WHEEL PLANE) OF 29,580 POUNDS AND A SIDE LOAD (PERPENDICULAR TO THE WHEEL PLANE) OF 7400 POUNDS ACTING INBOARD. MAINTAIN THIS LOAD FOR THE REMAINDER OF THE CYCLE.
3. UNLAND THE TIRE WHEN A DISTANCE OF 600 FEET HAS BEEN COMPLETED WITH FULL LOAD.

"E₂" - OUTBOARD YAW TEST (25 CYCLES)

SAME AS "E₁" EXCEPT WITH THE SIDE LOAD COMPONENT ACTING OUTBOARD.

ALTERNATE SIDE LOAD TEST - SAME AS "E₁" AND "E₂" EXCEPT IF UNABLE TO PERFORM CALIBRATION TESTS WITH AN INSTRUMENTED TEST AXLE TO VERIFY SIDE LOADS. THE YAW ANGLE USED FOR THE SIMULATED TURNING TESTS OUTLINED SHALL BE 6° WITH THE VERTICAL LOAD OF 29,580 POUNDS TO ALLOW FOR A DECREASE INSIDE LOAD DUE TO TREAD ABRASION.

- TEST F - TAXI OUT, REJECT AND RETURN TO STATION - THIS TEST SHALL CONSIST OF 3 PHASES:

- PHASE 1: TAXI THE TIRE ON THE FLYWHEEL FOR 4,000 FEET AT 25,000 POUNDS LOAD AND AT 46 MPH. STOP THE FLYWHEEL UNDER FULL LOAD. REPEAT THIS THREE (3) TIMES SUCH THAT A TOTAL DISTANCE OF 12,000 FEET IS COVERED IN NO MORE THAN 210 SECONDS.
- PHASE 2: (A) WHILE UNDER 25,000 POUND LOAD, IMMEDIATELY ACCELERATE THE FLYWHEEL AT A MINIMUM RATE OF 12 FT/SEC/SEC TO 115 MPH, DECREASING THE LOAD LINEARLY TO 24,000 POUNDS.
(B) MAINTAIN THE 24,000 POUND LOAD AND 115 MPH SPEED FOR 5 TO 6 SECONDS.
(C) THEN DECELERATE AT AN AVERAGE RATE OF 8.7 FT/SEC/SEC TO ZERO (0) SPEED IN 20 TO 21 SECONDS WHILE INCREASING THE LOAD LINEARLY TO 25,000 POUNDS.
- PHASE 3: MAINTAIN THE 25,000 POUND LOAD AND TAXI THE TIRE FOR 12,000 FEET AT 46 MPH. THIS PHASE SHALL NOT EXCEED 178 SECONDS.

- TEST G - CABLE BRUISE TEST #1 - A NEW TIRE INFLATED TO 400-500 PSI (CARRIER LANDING PRESSURE) SHALL BE LOADED AGAINST A 1.375 INCH DIAMETER STEEL CABLE OR FLAIN ROUND BAR STOCK RESTING ON A FLAT PLATE DIRECTLY UNDER THE AXLE. A VERTICAL LOAD OF 168,000 POUNDS SHALL BE APPLIED, RELEASED AND RE-APPLIED AT A LOCATION 180° FROM THE INITIAL POINT OF LOADING.

- TEST H - CABLE BRUISE TEST #2 - TIRE SHALL BE TESTED AS IN TEST G EXCEPT AS FOLLOWS:

VERTICAL LOAD - 200,000 POUNDS
LOCATION OF LOAD - 90° FROM TEST G LOADS

- TEST I - CATAPULT CONDITION - THE FLYWHEEL SHALL BE ACCELERATED AT AN AVERAGE RATE OF 14.0 FT/SEC/SEC FROM 0 TO 57 MPH. THE TIRE SHALL BE UNLANDED AFTER A ROLL DISTANCE OF 250 FEET HAS BEEN COVERED IN APPROXIMATELY 6 SECONDS. THE INITIAL LOAD OF 24,500 POUNDS SHALL BE INCREASED LINEARLY TO 67,000 POUNDS IN 1.75 SECONDS THEN DECREASED LINEARLY TO 42,000 POUNDS AFTER A TOTAL OF 6 SECONDS AT WHICH TIME THE TIRE IS UNLANDED. THE INFLATION PRESSURE SHALL BE 400-500 PSI CORRECTED FOR FLYWHEEL DIAMETER.

APPROVED 22 DEC 76 REVISED (B) FOR CHANGES SEE SHEET 3

P.A. NAVY - AS Other Cust	TITLE	MILITARY STANDARD
	TIRE, PNEUMATIC, AIRCRAFT 30x11.50-14.50, TYPE VIII(NAVY) FABRIC REINFORCED TREAD	MS14171 (AS)
PROCUREMENT SPECIFICATION	SUPERSEDES	SHEET 2 OF 4

REVISIONS STATEMENT APPROVED FOR PUBLIC RELEASE. DISTRIBUTION IS UNLIMITED.
 This military standard is approved by NAVAL AIR SYSTEMS COMMAND,
 Department of the Navy and is to be used by
 that activity. All other military activities are required
 to employ this standard where suitable. ANSC W/A

TEST J - BURST TEST - THE TIRE SHALL BE SUBJECTED TO A HYDROSTATIC BURST TEST. THE PRESSURE SHALL BE INCREASED UNTIL THE TIRE FAILS. THE FAILING PRESSURE, DESCRIPTION OF FAILURE AND LOCATION SHALL BE REPORTED IN THE QUALIFICATION TEST REPORT.

AIR RETENTION - THE TIRE SHALL BE INFLATED TO A PRESSURE OF 370 PSI AND ALLOWED TO STAND FOR A PERIOD OF 24 HOURS AT WHICH TIME THE PRESSURE DROP DUE TO GROWTH SHALL BE REPLACED. THE TIRE SHALL THEN STAND AN ADDITIONAL 24 HOURS AT WHICH TIME THE PRESSURE SHALL BE MEASURED AND THE TIRE INSPECTED. THE AIR PRESSURE LOSS SHALL NOT EXCEED 5 PERCENT. THERE SHALL BE NO SIDEWALL BLISTERS, TREAD SEPARATION OR OTHER APPEARANCE OR PERFORMANCE DEFECTS.

INFLATED PROFILE - A SKETCH OF THE TIRE PROFILE AT THE RATED INFLATION PRESSURE AND 400 PSI SHALL BE PREPARED AND INCLUDED AS PART OF THE QUALIFICATION TEST REPORT.

(B) WEAR DEPTH INDICATORS - AN EQUAL NUMBER OF TREAD WEAR INDICATORS EQUAL IN DEPTH TO 100 PERCENT OF THE HOLD SKID DEPTH SHALL BE INCORPORATED IN ALL TREAD RIBS AND THE TIRE OUTSIDE SHOULDERS (LOCATED 0.5 INCH FROM THE OUTER TREAD GROOVES). THE NUMBER OF INDICATORS SHALL BE DETERMINED BY DIVIDING THE CIRCUMFERENCE OF THE TIRE BY THE LENGTH OF ITS FOOTPRINT AND ADDING ONE WHEN THE RESULT YIELDS AN ODD NUMBER. THE INDICATORS SHALL BE LOCATED IN SUCH A WAY AS TO BE STAGGERED FROM RIB TO RIB.

QUALIFICATION TEST REPORT - THE QUALIFICATION TEST REPORT SHALL LIST THE RESULTS OF ALL QUALIFICATION TESTS AND CONSTRUCTION DETAILS OF THE QUALIFICATION TEST SAMPLE IN THE GENERAL FORM SHOWN IN FIGURE 6 OF MIL-T-5041 WITH DIMENSIONS LISTED AT RATED INFLATION AND 400 PSI. THE REPORT SHALL LIST THE MANUFACTURER'S TEST NUMBER. TWO COPIES OF THE QUALIFICATION TEST REPORT, TOGETHER WITH THE DATA AND MATERIAL SPECIFIED ABOVE AND IN MIL-T-5041 SHALL BE FORWARDED TO THE NAVAL AIR SYSTEMS COMMAND, WASHINGTON, DC 20361, ATTENTION: AIR-530321.

NOTES:

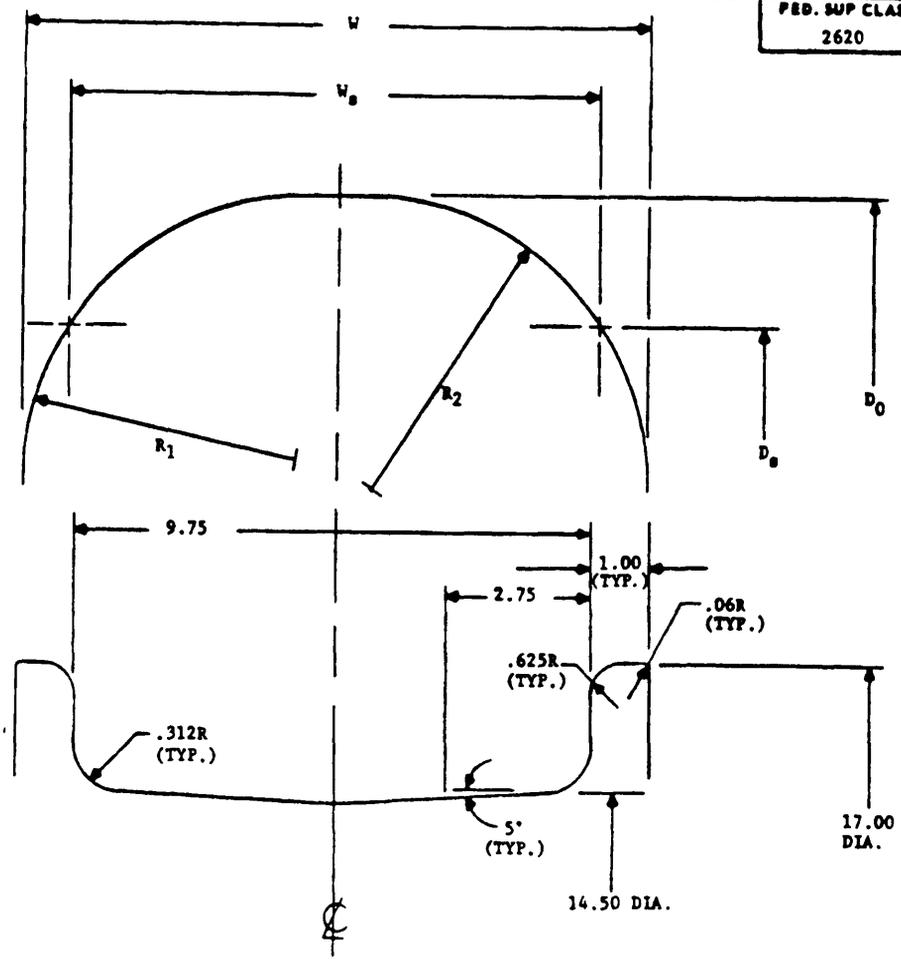
1. REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATIONS FOR BIDS, OR REQUEST FOR PROPOSAL EXCEPT THAT REFERENCE ADOPTED INDUSTRY STANDARDS SHALL GIVE THE DATE OF THE ISSUE ADOPTED.
2. FOR DESIGN FEATURE PURPOSES, THIS STANDARD TAKES PRECEDENCE OVER PROCUREMENT DOCUMENTS REFERENCED HEREIN.

UNCLASSIFIED STATEMENT (UNAPPROVED FOR PUBLIC RELEASE, DISTRIBUTION IS UNLIMITED)
 This military standard is approved by NAVAL AIR SYSTEMS COMMAND, Department of the Navy and shall be used by this activity. All other military activities are required to employ this standard when suitable. ANSC N/A

APPROVED 22 DEC 76 REVISED (B) FOR CHANGES SEE SHEET 3

P.A. NAVY - AS Other Cust	TITLE	MILITARY STANDARD
	TIRE, PNEUMATIC, AIRCRAFT 30x11.50-16.50, TYPE VIII (NAVY) FABRIC REINFORCED TREAD	MS14171 (AS)
PROCUREMENT SPECIFICATION	SUPERSEDES	SHEET 3 OF 4

FED. SUP CLASS
2620



TIRE DIMENSIONS (INCH)	RATED INFLATION PRESSURE		GROWN OR GROWN AND THROWN MAX.
	MIN.	MAX.	
OUTSIDE DIA. (D ₀)	28.75	29.75	31.00
SECTION WIDTH (W)	11.00	11.50	11.95
SHOULDER DIA. (D _s)	-	28.50	28.54
SHOULDER WIDTH (W _s)	-	10.50	10.60
RADIUS (R ₁)	-	-	5.15
RADIUS (R ₂)	-	-	5.30

THE CONTOUR OF THE AIRCRAFT TIRE SHALL NOT EXCEED THE ENVELOPE SHOWN ABOVE. THIS CONDITION MUST BE MET BEFORE, DURING, AND AFTER THE DYNAMIC TESTING PORTION OF QUALIFICATION TESTING AND WHILE THE TIRE IS ROTATING EQUIVALENT TO GROUND SPEEDS RANGING FROM 0 TO 230 MPH WITH THE TIRE INFLATED TO THE REQUIRED RATED PRESSURES. THE TIRE SHALL FIT A WHEEL OF SUITABLE MATERIAL WITH A CONTOUR PER THE DIMENSIONS AND OUTLINE SHOWN ABOVE WITHOUT CHAFFING OF THE SIDEWALL WHEN TESTED TO THE DYNAMIC PORTION OF THIS DRAWING.

FIGURE 1

APPROVED 22 DEC 76 REVISED (B) FOR CHANGES SEE SHEET 3

DISTRIBUTION STATEMENT A: APPROVED FOR PUBLIC RELEASE. DISTRIBUTION IS UNLIMITED.
This military standard is approved by NAVAL AIR SYSTEMS COMMAND, Department of the Navy. It may be used by that activity. All other military activities are required to employ this standard unless notified AMSC R/A

P.A. NAVY - AS Other Code	TITLE TIRE, PNEUMATIC, AIRCRAFT, 30x11.50-14.50, TYPE VIII(NAVY), FABRIC REINFORCED TREAD	MILITARY STANDARD MS 14171 (AS)
PROCUREMENT SPECIFICATION	SUPERSEDES	SHEET 4 OF 4