ZZ-T-410F
January 1, 1991
SUPERSEDING
ZZ-T-410E
June 24,1984

FEDERAL SPECIFICATION

TIRE, PNEUMATIC, INDUSTRIAL

This specification was approved by the General Services Administration for the use of all Federal agencies.

1. SCOPE AND CLASSIFICATION

1.1 SCOPE. This specification covers new and retreaded pneumatic tires, both tube and tubeless type for industrial, underground mining and skid steer vehicles.

1.2 CLASSIFICATION

1.2.1 STYLES, GROUPS, TYPES AND CLASSES. Tires shall be of the following Styles, groups, types and classes.

Style X - New
Style Y - Retreaded

Group 1 - Industrial and Underground Mining Tires
Group 2 - Skid Steer Tires

Type BA - Bias, tubeless
Type RA - Radial, tubeless
Type BB - Bias, tube-type
Type RB - Radial, tube-type

Class 1 - Shallow Tread
Class 2 - Regular Tread
Class 3 - Deep Tread
Class 4 - Extra Deep Tread
Class 5 - Three-part Size Designation Tires

1.2.2 SIZES AND LOAD DESIGNATION. Tires shall be of the sizes and load designations listed in publications of the recognized standardizing bodies listed in 2.2.

2. APPLICABLE DOCUMENTS.

2.1 SPECIFICATIONS AND STANDARDS. The following documents, of the issues in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

FEDERAL SPECIFICATION.

ZZ-I-550 - Inner Tube, Pneumatic Tire
ZZ-I-441 - Tire, Pneumatic: Retreaded and Repaired

FEDERAL QUALIFIED PRODUCTS LIST:

QPL-ZZ-T-410 - Tire, Pneumatic, Industrial

FEDERAL STANDARDS:

Fed. Std. No. 123 - Marking For Shipment (Civil Agencies).

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications and Standards at the prices indicated in the Index. The Index which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.)

(Single copies of this Specification and other Federal Specifications required by activities outside the Federal Government for bidding purposes are available without charge from General Services Administration Business Service Centers in Boston, MA ; New York, N.Y.; Philadelphia, PA.; Washington, D.C.; Atlanta, GA.; Chicago, IL.; Kansas City, MO; Fort Worth, TX.; Houston, TX.; Denver, CO.; San Francisco, CA.; Los Angeles, CA.; and Seattle, WA.)

(Federal Government activities may obtain copies of Federal Specifications, Standards, Handbooks, and the Index of Federal Specifications and Standards from established distribution points in their agencies.)

MILITARY SPECIFICATIONS:

MIL-T-4: Tire, Pneumatic, and Inner Tube, Pneumatic Tire; Tire with Flap; Packaging and Packing Of.

MIL-T-12459: Tire, Pneumatic: for Military Ground Vehicles.

MILITARY STANDARDS:

MIL-STD-105: Sampling Procedures and Tables for Inspection by Attributes.

MIL-STD-129: Marking for Shipment and Storage.

MIL-STD-1224: Visual Inspection Guide for Pneumatic Tires (Nonaircraft).

MIL-STD-45662: Calibration of Systems Requirements

(Copies of Military Specifications and Standards required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 OTHER PUBLICATIONS. The following documents form a part of this specification to the extent specified herein. Unless a specific issue is identified, the issue in effect on date of invitation for bids or request for proposal shall apply.

ASTM: D412-Standard Test Methods For Rubber Properties In Tension.

The Tire and Rim Association, Inc. Yearbook.
(Application for copies should be addressed to The Tire and Rim Association, Inc., Crown Pointe, 175 Montrose W. Ave. #150, Copley, OH 44321. Telephone 216-666-8121.

THE EUROPEAN TIRE AND RIM TECHNICAL ORGANIZATION YEARBOOK:
(Copies may be obtained from the European TIRE & Rim Technical Organization, the General Secretary, ETRTO, Avenue Brugmann 32, Boite 2, B-1060, Brussels, Belgium).

THE JAPAN AUTOMOBILE TIRE MANUFACTURERS' ASSOCIATION, INC.:
(Copies may be obtained from the Japan Automobile Tire Manufacturers', Inc., 9th Floor, Toranomon Bld., No. 1-12, 1-Chome Toranomon, Mina To-Ku, Tokyo, Japan.

3. REQUIREMENTS.

3.1 QUALIFICATION. Tires furnished under this specification shall be tires which have been qualified and listed on, or approved in writing by the qualifying activity for listing on the applicable Federal Qualified Products List. Retreaded tires shall be previously qualified casings under QPL-ZZ-T-410 to which tread rubber has been affixed. Qualification and listing of tires on the Qualified Products List does not guarantee the acceptance of the tires in any future procurement nor constitute waiver of the requirements of the specification. The cost for performing qualifications or REQUALIFICATIONS tests shall be wholly borne by the applicant. Tires, tubes, and flaps shall be supplied for testing at no cost to the Government.

For Style X Tires, qualification will be extended to other tires which are of equal or higher quality level as certified by the manufacturer and provided they have the same construction and materials.

For Style Y Tires, qualification of a particular retreaders process which the retreaders quality is clearly established will be extended to other tire models retreaded by the same process, having equal or better compound as certified by the retreader.

For both style tires, qualification may be extended to a tube-type tire brand or model, provided it is of equivalent construction (design and materials), with the exception of the bead, to the tubeless model qualified. Using this same provision, the tube-type shall also qualify the tubeless model or brand.

For Style X Tires. Qualification may be extended to other manufacturer's production points providing the standards and methods of quality control are equivalent at each point of manufacture. The brand or model must be of equivalent compounds and construction from both locations.

For Style Y, qualification may be extended to other retreading facilities for a particular manufacturer's process provided the manufacturer certifies that the process and quality control procedures are identical at the additional facilities.

For Style X tires, prospective contractors shall submit a list of their tire sizes, brands/models, group, type, and class (see 1.2.1) and fabric materials of the body plies and belts or breakers of each group the manufacturer intends to furnish under this specification.

For Style Y tires, prospective contractors shall submit a list of their retreading processes, as defined in Section 3.4 of Federal Specification ZZ-T-441H, tires sizes, models, group, type, and class (see 1.2.1) of each group the manufacturer intends to furnish under this specification.

The Government representative shall inform the respective contractors which tire sizes have been selected for the tests. The contractors shall arrange to supply test tire sizes selected they propose to qualify to the Federal Qualified Products List. The tire samples shall be selected by a Government representative from the manufacturer's production line, after passing their final finish inspection or when tires to be selected are stored in a warehouse, the tire sample shall be selected, at random, from a batch of not less than 10 tires for Style X and 10 for Style Y. All tires selected for qualification tests shall be permanently identified by a tamperproof seal.

When the sample tires are selected from the manufacturer's production line, the Government representative shall select the tire samples needed from a normal production run. These tires shall not represent special run tires. Special run tires are those tires which are given extra attention other than that given to normal production tires by the manufacturer's quality control procedures. The Government representative shall require the manufacturer to certify in writing that the tires selected are not special run tires.

3.1.1 RETESTS. In the event of failure to pass the laboratory tests required in paragraph 4.3.1, the manufacturer shall be allowed a maximum of one retest. Retest tires shall be selected at the same time as the initial test tires. The acceptance and rejection criteria is shown in Table II.

3.1.2 REQUALIFICATION. Once a tire manufacturers particular model/retreading process of tire has been qualified, it shall remain qualified and be listed on the QPL for a period of 10 years. At the end of the appropriate time period, the manufacturer must requalify the original tire model/retreading process which was submitted for qualification or any other tire model for Style X to which qualification was extended based on the qualification of the original model. For Style Y, the retreader must recertify additional retreading facilities as specified in 3.1, paragraph 6.

The government shall require a supplier listed on the Qualified Products List to show cause why his tires/retreading process should remain on the Qualified Products List if he has modified his product or processing sufficiently that the validity of the previous qualification is questionable, or when deemed that the quality of the product is not being maintained. When it is determined that the product delivered does not meet the specification or that the product delivered differs from that originally qualified, the government shall give that manufacturer thirty days notice of the intent to remove the product from the qualified products thereof. If the manufacturer does not make satisfactory response within thirty days, the product shall be removed from the qualified products list.

When a tire model or retreading process is determined to be hazardous in use, the government shall immediately notify the manufacturer and the tire model or retreading process shall be removed from the qualified products list. The tire model or retreading process shall not be reinstated until the manufacturer satisfies the government that the hazardous condition has been corrected.

3.1.2.1 REQUALIFICATION LABORATORY TESTS. Requalification laboratory test shall be conducted in accordance with paragraph 4.3.

3.2 MATERIALS.

3.2.1 REGULATORY REQUIREMENTS. In accordance with the section 23.403 of the Federal Acquisition Regulations, the Government's policy is to acquire items composed of the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition without adversely affecting performance requirements or exposing suppliers' employees to undue hazards from the recovered materials.

3.2.2. Compound. The basic compound used in the tire construction shall be of natural rubber, synthetic rubber, or a combination thereof. Reclaimed rubber may be used in basic compounds.

3.3 Flaps. When specified (see 6.2), a flap of the correct size shall be furnished in each tire.

3-4 PERFORMANCE.

3.4.1 Breaking energy. When tested in accordance with 4.3.2 the minimum breaking energy shall be as specified in Table I.

TABLE I

MINIMUM PLUNGER ENERGY VALUES IN INCH POUNDS

PLY RATING	ALL 4 "RIM DIAM, 5" RIM DIAM AND ALL 6" RIM DIAM. WITH NOMINAL CROSS SECTION OF 4.10 AND LESS	ALL OTHER INDUSTRIAL TIRES
	USE 1/2 INCH PLUNGER	USE 3/4 INCH PLUNGER
2	150	600
4	300	1200
6	450	1800
8		2400
10		3000
12		3600
14		4200
16		4800
18		5400
20		6000
22		6600
24		7200

3.4.2. TEMPERATURE ABILITY. All tires supplied shall have an inherent capability of both storage and acceptable performance in ambient air temperature ranging from plus 120 degrees F (49 degrees C) to minus 40 degrees F (-40 C).

3.4.3 PHYSICAL REQUIREMENTS.

3.4.3.1 TENSILE STRENGTH. The tensile strength of tire tread compounds shall be not less than 1,700 pounds per square inch (psi), and for sidewall compounds not less than 900 psi.

3.4.3.2 ULTIMATE ELONGATION. The ultimate elongation of treads shall be not less than 400 percent, and for sidewall compounds not less than 300 percent.

3.4.4 ENDURANCE. After completion of test, tires shall show no evidence of broken cords, chunking, or separation of tread chunking, or separation of tread, ply, cord, or bead. Cracking in the tread or sidewall sufficient to expose the fabric shall be cause for rejection.

3.5 DIMENSIONS

3.5.1 TIRE OVERALL WIDTH AND DIAMETER. When tested in accordance with 4.3.1.1.2 and 4.3.1.1.3, tire overall diameter and overall width shall meet the requirements of the appropriate standardizing body.

3.5.2 SKID DEPTH. When tested in accordance with 4.3.1.1.4, skid depth shall meet the requirements as shown in Table II.

TABLE II

MINIMUM SKID DEPTH
7 INCH RIM DIAMETER AND SMALLER

SECTION WIDTH	SHALLOW	REGULAR	DEEP	EXTRA DEEP
2.80 (NHS)	.11			
3.40 (NHS)	.13	.17		
4.10 (NHS)	.15	.22		
4.80 (NHS)	.16	.22		
5.30 (NHS)	.17	.23		
6.90 (NHS)	.31	.55		

TABLE II (CONTINUED)

MINIMUM SKID DEPTH
8 INCH RIM DIAMETER AND LARGER

SECTION WIDTH	SHALLOW	REGULAR	DEEP	EXTRA DEEP
4.80 (NHS)	.16	.22		
5.30 (NHS)	.17	.22		
5.70 (NHS)	.21	.27	.50	
6.90 (NHS)		.31	.55	
6.00 (NHS)		.36	.52	
6.50 (NHS)		.34	.58	
7.00 (NHS)		.36	.60	
7.50 (NHS)		.38	.63	
8.25 (NHS)		.41	.71	1.06
9.00 (NHS)		.41	.71	1.06
10.00(NHS)		.43	73	1.00
11.00(NHS)		.54	76	1.00

THREE-PART SIZE DESIGNATION
INDUSTRIAL AND MINING TIRE

14x8-6	(NHS)	.33
18x7-8	(NHS)	.32
18x9-8	(NHS)	.35
21x8-9	(NHS)	.37
21x9-9	(NHS)	.37
23x8-10	(NHS)	.40
23x9-12	(NHS)	.43
23x10-12	(NHS)	.43
24x12-12	(NHS)	.65
27x9-10	(NHS)	.71
27x10-12	(NHS)	.43
27x15-10	(NHS)	.72
28x9-15	(NHS)	.52
28x12-15	(NHS)	.75
28x13-15	(NHS)	.69
29x8-15	(NHS)	.60
30x8-15	(NHS)	.38
32x12-15	(NHS)	.90
32x15-15	(NHS)	.86
35x15-15	(NHS)	.86
36x11-15	(NHS)	.73
44x18-20	(NHS)	1.08

SKID STEER TIRES

7.00-15	(SS)	.60
7.50-16	(SS)	.63
8.25-15	(SS)	.67
10-16.5	(SS)	.60
12-16.5	(SS)	.65
14-17.5	(SS)	.69
15-19.5	(SS)	.73
23x8.50-12	(SS)	.30
26x12.00-12	(SS)	.32
27x8.50-15	(SS)	.30
5.70-12	(SS)	.50
5.70-15	(SS)	.50

3.6 AGE OF TIRES. Tires furnished under this specification shall not be more than twenty four (24) months old from the date of manufacture for Style X tires, or twenty four (24) months old from the date of retreading, Style Y tires, on the date the tires are delivered.

3.7 IDENTIFICATION MARKING. Each tire shall be branded, molded, or have permanently affixed in an unobstructed location on the sidewall, the following information:

(a) Original manufacturer's name, brand name, or trade mark. (Style X and Y Tires)

(b) Retreader's identification Code including date of retreading (Style Y)

(c) Nominal size.

(d) Load designation (ply rating or symbol mark).

(e) Serial Number. (Style X tires only)

(f) Tubeless, when applicable.

(g) Radial, if applicable.

3.8 SPECIAL LABELING. (*see* 6.2). When specified, each tire shall have a special label on the face of the tread. This label shall supplement the manufacturer's commercial label, so when combined they show the tire size, Style, Group, Type, Class, and load designation or ply rating whether tube type or tubeless, tread type, the National Stock Number, Contract Number, Purchase Order Number, the month and year of manufacture, and the average weight. The label shall have a pressure sensitive adhesive backing which will not allow accidental loss and will not cause deterioration of the tread compound. All printing shall be clear and readable and shall boldly contrast with the label's background. The National Stock Number shall be in letters and numbers not less that 0.25 inch high. The special label and the manufacturers commercial label shall be placed on the tread face so that both may be read at the same time by one individual without having to rotate the tread.

3.9 PROCESS QUALITY. Tires shall show no evidence of defects. All plies, including breaker strips and belts, shall be smooth and evenly laid and shall be free of buckles, wavy cords, air pockets, depressions, and any other defects or imperfections which may impair serviceability.

4. QUALITY ASSURANCE PROVISION.

4.1 RESPONSIBILITY FOR INSPECTION. The contractor is responsible for the performance of all inspection and test requirements as specified herein. Except as otherwise specified, the contractor may utilize his own or any other inspection facilities and services acceptable to the Government. The test shall be witnessed by a Government Quality Assurance Specialist or thee QPL manager. Records of the examination and test shall be kept complete and provided to the Government QPL manager at test completion. The Government reserves the right to perform any of the inspections and tests set forth in the specification where such inspections and tests are deemed necessary to assure that supplies and services conform to prescribed requirements.

4.1.1 INSPECTION OF COMPONENT AND MATERIAL. In accordance with 4.1, the contractor is responsible for insuring that components and materials used are manufactured, sampled, and examined and tested in accordance with the requirements of this specification.

4.1.2 MATERIAL FURNISHED FOR TESTS. Tires, flaps, valves, and inner tubes used for or in tests shall be furnished by the contractor without cost to the Government.

4.2 QUALIFICATION TESTS, INSPECTIONS, AND EXAMINATIONS.

4.2.1 QUALIFICATION. Qualification shall be witnessed by the Government and performed at the prospective contractor's or other commercial laboratory acceptable to the Government, if specified. The costs incurred for the qualification shall be borne by the prospective contractor.

4.2.1.1 REQUIREMENTS FOR STYLE X (NEW) TIRES.

The qualification examination and tests shall consist of visual examination, dimensional examination, breaking energy, hidden defects tread thickness tests, tensile and elongation test, and endurance test in accordance with Table III.

4.2.1.2 REQUIREMENTS FOR STYLE Y (RETREADED) TIRES. The qualification shall consist of visual examination, hidden defects, tire overall diameter (see 4.3.1.1.2), tire overall width (see 4.3.1.1.3), skid depth (see 4.3.1.1.4), tensile strength and ultimate elongation (see 4.3.4) of the tread compound only.

Table III. EXAMINATIONS AND TESTS

PAR. NO.		NUMBER OF TESTS STYLE X	STYLE Y	TEST ACC.	REJ.	RETEST ACC.	REJ.
4.4.2	Visual examination.	1	1	0	1	0	1
.5.1	Dimensional examination.	1	1	0	1	0	1
.5.2	Breaking energy and hidden defects.	1	*	0	1	0	1
4.5.3	Tensile strength and elongation tests.	1	1	0	1	0	1
4.5.4	Endurance test.	2	2	0	1	0	1

*Breaking Energy Test Not Required of Style Y Tire.

4.2.2 Retests. In the event of failure to pass the laboratory test listed in Table II, the contractor shall be allowed a maximum of one retest each for groups 1,2, and 3 tires. Each retest shall consist of all the test characteristics listed in Table II for the retest groups 1, 2, and 3 tires. The acceptance and rejection criteria are listed in Table II.

4.3 EXAMINATIONS, TESTS, AND INSPECTION.

4.3.1 DIMENSIONAL EXAMINATIONS.

4.3.1.1 TIRE OVERALL DIAMETER, TIRE OVERALL WIDTH, AND SKID DEPTH TESTS.

4.3.1.1.1 PREPARATION OF TIRE. The tire shall be mounted on the design rim specified by the appropriate standardizing body (see 2.2) and inflated to the specified pressure corresponding to the maximum load for its ply rating or symbol. The tire shall stand for a minimum of 24 hours at room temperature and the pressure adjusted to the specified pressure.

4.3.1.1.2. TIRE OVERALL DIAMETER. The overall diameter shall be determined to the nearest 0.01 inch by measuring the outside circumference of the inflated tire with a steel tape and dividing by 3.16. The diameter may be determined by means of a tape calibrated to directly show tire diameter.

4.3.1.1.3. TIRE OVERALL WIDTH. The tire overall width is the average maximum width of the inflated tire including the sidewalls, side ribs, bars, decorations, letters, or numerals. The width shall be measured to the nearest 0.01 inch at six different points equally spaced around the tire and the results shall be averaged.

4.3.1.1.4. SKID DEPTH. The deepest point of the tread groove nearest to or on the tread centerline of the tire shall be measured to the nearest 0.01 inch at six points equally spaced around the inflated tire and the results shall be averaged. The skid depth shall meet the requirements shown in Table II.

4.3.2 BREAKING ENERGY. Tires shall meet the requirements shown in Table I.

4.3.2.1. BREAKING ENERGY PLUNGER TEST.

4.3.2.1.1. PREPARATION OF TIRE FOR BREAKING ENERGY TESTS. The tire shall be mounted on the design rim specified by the appropriate standardizing body (see 2.2) and inflated to the pressure shown for the maximum load. The tire shall be allowed to stand for a minimum of 24 hours at room temperature and the pressure adjusted to the specified pressure.

4.3.2.1.2 PROCEDURE. After the tire has been mounted and measured as specified in 4.3.1.1.2 through 4.3.1.1.4 inclusive, a cylindrical9 steel plunger with a hemispherical end shall be forced into the center of the tread, avoiding grooves, at the rate of two inches per minute. Five measurements shall be made at points equally spaced around the circumference of the tire. In the event the tire fails to break before the plunger is stopped by reaching the rim, the force and penetration valves shall be taken as this occurs. Tubes shall be allowed in tubeless tires. The energy to break a tire shall be calculated from the average energy values at break by means of the following formula:

$$W = \frac{F\ P}{2}$$

W = energy at break in inch-pounds
F = force at break in pounds
P = penetration at break in inches

4.3.3 HIDDEN DEFECTS INSPECTION. A visual inspection of two tires shall be made for evidence of hidden defects. The tire shall be cut into not less than eight equal cross sections, with each section being cut circumferentially in midcrown and on each side of the crown at the point of maximum shoulder thickness; any additional cuts deemed necessary for complete inspection of the tire shall be made. The cut sections shall then be inspected for evidence of hidden defects such as separation of tread, ply, or bead in accordance with MIL-STD-1224.

4.3.4 TENSILE STRENGTH AND ELONGATION TEST. After being checked for hidden defects, the tire shall be subjected to test for tensile strength and ultimate elongation of tread and sidewall, to determine the conformance to 3.4.3.1 and 3.4.3.2 respectively.

4.3.4.1 PREPARATION OF TEST SAMPLES. Test samples shall be cut (longitudinally at center of tread or sidewall) in accordance with ASTM D412. On tread samples, the nonskid portion shall be sliced off with a knife, after which the central portion shall be buffed on each side over a length of 2 1/2 inches until free of ply or breaker compound, fabric impressions, or irregularities of surface. On sidewall samples, rubber solvent shall be used, if necessary, to separate rubber and fabric, and one or both sides shall be buffed as necessary.

4.3.4.2 PROCEDURE. The samples prepared as specified in 4.3.4.1 shall be tested for tensile strength and ultimate elongation in accordance with ASTM D 412.

4.3.5 ENDURANCE.

4.3.5.1 PREPARATION OF TIRE FOR ENDURANCE TEST. The tire shall be mounted on the design rim specified by the appropriate standardizing body and inflated to the pressure recommended for the maximum rated load. The tire shall be conditioned at a temperature of 100 degrees plus or minus five degrees for at least three hours and the pressure adjusted to within pound per square inch of the specified pressure. The conditioned tire shall not be taken out of the 100 degree plus or minus five degree temperature environment until after the completion of the test. The temperature sensing

device shall be located in an area where it shall not be affected by the heat generated by the running tire, intakes, outlets, ventilators, exhaust vents, etc. The test load shall be as shown for the tire in Table IV.

4.3.5.2 EQUIPMENT. The test wheel shall be a flatfaced steel wheel 67.23 inches in diameter (1/300-mile in circumference) and at least as wide as the tread width of the test tire. The test wheel and tire shall be located in the air space controlled at a temperature of 100 degrees +/- five degrees F.

4.3.5.4 TEST PROCEDURE. The tire and rim assembly shall be mounted on thee test axle and pressed against the test wheel. The test loads, speeds, and test times required shall be as indicated in Table II. The wheel shall be rotated at the speed specified in Table II. During the test, the initial inflation pressure shall be allowed to rise. At the end of the first four hours of test, the pressure shall be measured. (If there is any decrease in pressure, the cause of the decrease shall be determined, corrected and the pressure restored.) A maximum of 10 minutes shall be allowed for all load changes. At the completion of the total test miles, the tire shall be cut as specified in 4.3.3 and examined for conformance 3.4.4.

TABLE IV. CONDITIONS FOR ENDURANCE TEST.

Speed (mph)	TEST LOAD (PERCENT OF MAXIMUM LOAD) Rim Diameter 4 thru 13	Rim Diameter thru 24	Hours	Test Miles	Total Test Miles
10	80	70	24	240	
	100	88	24	240	
	120	106	24	240	720

4.3.6 INSPECTION OF PREPARATION FOR DELIVERY. The preservation, packaging, packing, and marking of the tires shall be inspected to determine conformance to the applicable requirements of section 5 of this specification.

4.4 QUALITY CONFORMANCE INSPECTION.

4.4.1 SAMPLING FOR INSPECTION AND ACCEPTANCE. Sampling for inspection and acceptance shall be performed in accordance with the provisions set forth in MIL-STD-105. Testing, if specified, shall be performed at the contractor's or other commercial laboratory acceptable to the Government.

4.4.2 INSPECTION LOT. The inspection lot shall consist of all tires of one style, group, size, and ply type, from an identifiable production period, from one manufacturer, one plant, and submitted for acceptance at one time.

4.4.3 VISUAL EXAMINATION. The sample unit shall be one completely fabricated tire. Visual examination of the external and internal surfaces of each sample tire shall be in accordance with MIL-STD-1224. The AQL for major defects shall be 4.0 percent defective and for minor defects, 6.5 percent defective. The inspection level shall be S-4.

4.4.4 DIMENSIONAL EXAMINATION. The sample unit shall be one completely fabricated tire. Each sample tire shall be inspected for:

Tire overall diameter (see 4.3.1.1.2).
Tire overall width (see 4.3.1.1.3).
Skid depth (see 4.3.1.1.4).

A tire failing to pass one or more of the above characteristics shall be considered a defective tire. The acceptance shall be in accordance with Table IV. Use any of the three tires selected for visual examination.

4.4.5 MATERIAL FURNISHED FOR TESTS. Tires, flaps, valves and inner tubes used for or in tests shall be furnished by the contractor without cost to the Government.

5. PREPARATION FOR DELIVERY.

5.1 PACKAGING. Packaging shall be level A or C, as specified (see 6.2).

5.1.1 LEVEL A. The tires shall be packaged in accordance with Level A requirements of MIL-T-4.

5.1.2 LEVEL C. The tires shall be packaged in accordance with the contractor's commercial practice.

5.2 PACKING. Packing shall be level A, B, or C, as specified (see 5.2)

5.2.1 LEVEL A. The tires shall be packaged in accordance with the Level A requirements of MIL-T-4.

5.2.2 LEVEL B. The tire shall be packed in accordance with the level B requirements of MIL-T-4 .

5.2.3 LEVEL C. The tires shall be packed to insure carrier acceptance and safe delivery to destination in containers complying with the rules and regulations applicable to the mode of transportation.

5.3 MARKING.

5.3.1 CIVIL AGENCIES. In addition to markings required by the contract or order, the tires and shipping containers shall be marked in accordance with Fed. Std. No. 123.

5.3.2 MILITARY AGENCIES. In addition to markings required by the contract or order, the tires and shipping containers shall be marked in accordance with MIL-STD-129.

6. NOTES.

6.1 INTENDED USE. Tires covered by this specification are primarily intended for mounting on slow speed industrial vehicles, and industrial counterbalanced forklift trucks.

6.2 ORDERING DATA. Purchasers should select the preferred options permitted herein and include the following information in procurement documents:

(A) Title, number, and date of this specification.
(B) Group, type, size, and ply rating (see 1.2. and Table IV).
(C) If flap is to be furnished (see 3.3.7).
(D) If inspection requirements are to be performed by other than the supplier (see 4.1).
(E) Lot formation if other than specified (see 4.3.1.1).
(F) Selection of applicable level of packaging and packing (see 5.1 and 5.2).

6.3 SUPERSESSION INFORMATION. This specification supersedes that part which covers industrial pneumatic tire in ZZ-T-410E, dated June 23, 1984, ZZ-T-410D, dated November 30, 1981; ZZ-T-410C, dated February 2, 1979; ZZ-T-410B, dated September 20, 1978 and ZZ-T-410A, dated December 11, 1970 and ZZ-T-410, dated February 15, 1950. That part of ZZ-T-410 which covers inner tubes will be superseded by ZZ-I-550D.

Military Custodians		Preparing Activity
Army	AT	GSA-FSS
Navy	YD	
Air Force	99	

Review Activities

Navy - YD

Air Force - 84