MIL-W-27265E
27 June 1988
SUPERSEDING
MIL-W-27265D
21 March 1979

MILITARY SPECIFICATION

WEBBING, TEXTILE, WOVEN NYLON IMPREGNATED

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This document covers resin or latex impregnated woven nylon textile webbing.

1.2 Classification. The after-treated webbing shall be one of the following classes as specified (see 6.2):

Class R - Resin impregnated

Class L - Latex impregnated

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: U.S. Army Natick Research, Development, and Engineering Center, Natick, MA 01760-5014 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A FSC 8305

SPECIFICATIONS

MILITARY

MIL-W-4088 - Webbing, Textile, Woven Nylon
MIL-W-17337 - Webbing, Textile, Woven Nylon
MIL-P-43334 - Packaging of Textile Webbing and Tape

STANDARDS

FEDERAL

FED-STD-191 - Textile Test Methods

MILITARY

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

(Copies of specifications, standards, and handbooks required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this specification to the extent specified herein. Unless otherwise specified, the issues shall be those in effect on the date of the solicitation.

Rules and Regulations Under the Textile Fiber Products Identification Act

(Copies may be obtained from the Federal Trade Commission, Pennsylvania Avenue at Sixth Street, N.W., Washington, DC 20580-0001.)

(Copies of drawings, publications, and other Government documents required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

* 2.2 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 First article. When specified in the contract or purchase order, a sample shall be subjected to first article inspection (see 4.3, 6.2, and 6.4).

* 3.2 Material (see 6.5). The untreated nylon webbing to be impregnated shall conform to the type, class, width, and color of MIL-W-4088 or MIL-W-17337 as specified (see 6.2).

* 3.2.1 Class R - resin impregnated. The class R webbing shall be impregnated with polyvinyl butyral plasticized with butyl ricinoleate or Resin TR-5418-3 or Resin Solucote 1013 (see 6.7). The resin shall be applied from a water dispersion, dried and cured to form a firm adherent and even deposit or coating on the yarns of the webbings (see 6.6).

3.2.1.1 Breaking strength, after treatment. The breaking strength of the treated class R webbing shall be no less than the applicable minimum requirement specified in MIL-W-4088 or MIL-W-17337 when tested as specified in 4.4.3.

3.2.1.2 Breaking strength, resistance to abrasion. The breaking strength, after abrasion, for all types of treated class R webbing, except type XVIII, of MIL-W-4088 shall be no less than 60 percent of its breaking strength after treatment when tested as specified in 4.5. The breaking strength, after abrasion, of the type XVIII treated class R webbing shall be no less than 75 percent of its breaking strength after treatment when tested as specified in 4.4.3.

3.2.1.3 Weight. The weight of the treated class R webbing shall not exceed the maximum specified for the untreated webbing plus 10 percent of the specified untreated weight when tested as specified in 4.4.3.

3.2.1.4 Thickness. The thickness of the treated class R webbing shall be no more than the maximum specified for the untreated webbing and no less than the minimum specified for the untreated webbing with a minus tolerance of 12 percent when tested as specified in 4.4.3.

* 3.2.1.5 Extractable matter. The extractable matter in methylethyl ketone of polyvinyl butyral treated class R webbing for all types except type XVIII of MIL-W-4088 shall not exceed 8.5 percent by weight and for type XVIII shall not exceed 4.5 percent. The resin solids content of Resin TR-5418-3 or Resin Solucote 1013 treated class R webbing for all types except type XVIII of MIL-W-4088 shall not exceed 8.5 percent by weight and for type XVIII shall not exceed 4.5 percent. Testing shall be as specified in 4.4.3.

3.2.2 Class L - latex impregnated. The class L webbing shall be impregnated with natural rubber latex containing the necessary curatives and anti-oxidants to meet the physical properties specified herein.

3.2.2.1 Breaking strength, after treatment. The breaking strength of the treated class L webbing shall be no less than the applicable minimimum requirement specified in MIL-W-4088 or MIL-W-17337 when tested as specified in 4.4.3.

3.2.2.2 Breaking strength, resistance to abrasion. The breaking strength, after abrasion for all types of treated class L webbing of MIL-W-4088 shall be no less than 80 percent of its breaking strength after treatment when tested as specified in 4.4.3.

3.2.2.3 Breaking strength, after accelerated aging. The breaking strength of the treated class L webbing after accelerated aging shall be no less than 95 percent of the breaking strength after treatment, when tested as specified in 4.5. In addition, the specimens after accelerated aging shall display no evidence of stickiness or gumming when tested as specified in 4.4.3.

3.2.2.4 Weight. The weight of the treated class L webbing shall not exceed the maximum specified for the untreated webbing plus 10 percent of the specified untreated weight when tested as specified in 4.4.3.

3.2.2.5 Thickness. The thickness of the treated class L webbing shall be no more than the maximum specified for the untreated webbing and no less than the minimum specified for the untreated webbing with a minus tolerance of 12 percent when tested as specified in 4.4.3.

3.2.2.6 Stiffness.

* 3.2.2.6.1 At -65°F. The class L treated webbing shall be subjected to a temperature of -65°F ± 2°F and compared for stiffness to a specimen tested at standard conditions and the results obtained shall not be more than three times greater than the results obtained at standard conditions, when tested as specified in 4.4.3.

3.2.2.6.2 At -65°F, after accelerated aging. After accelerated aging the class L treated webbing shall be tested for stiffness as specified in 4.4.3. The results shall be compared to that of a treated but unaged specimen similarly tested and shall vary not more than ± 20 percent, when tested as specified in 4.4.3.

3.3 Color. When undyed webbing is specified, the color of the webbing may deviate from the natural state to that degree imposed by the color of the treating agent used. When dyed webbing is specified, the dyed untreated webbing shall match the applicable shade standard (see 6.2 and 6.3), and the shade imparted by the treatment shall be acceptable.

* 3.3.1 Matching. The color of the webbing shall match the standard sample when viewed under filtered tungsten lamps that approximate artificial daylight and that have a correlated color temperature of 7500 ± 200K, with illumination of 100 ± 20 foot candles and shall be a good match to the standard sample under incandescent lamplight at 2300 ± 200K.

3.3.2 Colorfastness. The dyed and treated webbing shall show colorfastness to light and laundering equal to or better than the standard sample. When no standard sample is established for colorfastness, the dyed and treated webbing shall show "good" fastness to light and "fair" fastness to laundering when tested as specified in 4.4.3.

3.4 Length and put-up. The webbing shall be put-up in rolls. Unless otherwise specified (see 6.2), the length and put-up shall be as specified in MIL-W-4088 or MIL-W-17337, as applicable.

3.5 Identification tickets. Each roll of webbing shall have an identification ticket attached to the roll in accordance with MIL-P-43334. When webbing is not procured directly by the Government, the information to be printed on the ticket shall appear on the container, and marking of the rolls will not be necessary.

3.6 Fiber identification. Each roll of webbing shall be labeled or ticketed for fiber content in accordance with the Textile Fiber Products Identification Act.

3.7 Workmanship. The finished webbing shall conform to the quality of product established by this document and the occurrence of defects shall not exceed the applicable acceptable quality levels.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this document where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this document shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirement in the document shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.1.2 Certificates of compliance. When certificates of compliance are submitted, the Government reserves the right to inspect such items to determine the validity of the certification.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

a. First article inspection (see 4.3).
b. Quality conformance inspection (see 4.4).

4.3 First article inspection. When a first article is required (see 6.2), it shall be visually examined for appearance and color, and tested for the characteristics specified in 4.5. The presence of any defect or failure to pass any test shall be caused for rejection of the first article.

4.4 Quality conformance inspection. Unless otherwise specified, sampling for inspection shall be performed in accordance with MIL-STD-105.

* 4.4.1 Component and material inspection. In accordance with 4.1, components and materials shall be inspected in accordance with all the requirements of referenced documents unless otherwise excluded, amended, modified, or qualified in this document or applicable purchase document.

4.4.2 End item examination.

* 4.4.2.1 Yard-by-yard examination. The webbing shall be examined on both sides for the defects listed in table II. All defects found shall be counted regardless of their proximity to each other, except where two or more defects represent a single local condition, in which case only the more serious defect shall be counted as one defect for each warpwise yard or fraction thereof in which it occurs. The lot size shall be expressed in yards. The sample unit shall be one linear yard. The inspection level shall be III and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 2.5 minor for defects. In addition, the lot shall be rejected if one or more critical defects appear in the sample. The number of rolls from which the sample yardage is to be selected shall be in accordance with table I. The sample yardage shall be apportioned equally among the selected rolls.

TABLE I. Sample size

Lot size (yards)	Sample size in rolls	Acceptance number 2/
1,200 or less 1/	3	0
1,201 up to and including 3,200	5	0
3,201 up to and including 10,000	8	0
10,001 up to and including 35,000	13	0
35,001 up to and including 150,000	20	1
150,001 and over	32	2

1/ If a lot contains fewer than 3 rolls, each roll in the lot shall be examined.

2/ Applicable to overall and length examinations only.

TABLE II. End item visual defects

Examine	Defect	Classification	
		Critical	Minor
Abrasion marks	Any	X	
Crease	Permanent, resulting from faulty impregnation procedure	X	
Cut, hole, or tear	Any	X	
Stain or steak	Impregnation compound stain or streak clearly visible at distance of 6 feet		X
Thin or weak place	Any	X	
Uneven impregnation	Any	X	

* 4.4.2.2 Overall examination. The webbing shall be examined for the defects listed below. Each defect listed shall be counted not more than once in each roll examined. The sample size shall be the applicable number of rolls indicated in table I. Each roll in the sample shall be examined over its entire length. The lot shall be rejected if the total number of defects in the sample exceeds the applicable acceptance number specified in table I.

Defects

Objectionable odor
Overall uncleanness
Poor penetration of impregnant, stickiness, gumming
Identification tickets missing
Not labeled in accordance with the Textile Fiber Products Identification Act

* 4.4.2.3 Length examination. The webbing shall be examined for the defects listed below. The sample shall consist of the applicable number of rolls indicated in table I. If the total number of defects in the sample rolls exceeds the applicable acceptance number specified in table I, or if the total of the actual gross lengths of rolls in the sample is less than the total of the gross lengths marked on the roll tickets, the lot shall be rejected.

Defects

Gross length less than specified minimum length or more than specified maximum length
Gross length more than 2 yards less than gross length marked on piece ticket
Any piece less than 10 yards in length
Any roll containing more than 3 pieces

* 4.4.3 End item testing. The end item shall be tested for the characteristics listed in table III. The methods of testing specified in FED-STD-191, wherever applicable, and as listed in table III shall be followed. The physical and chemical values specified in section 3 apply to the results of the determinations made on a sample unit for test purposes as specified in the applicable test methods. All test reports shall contain the individual values utilized in expressing the final results. The sample size shall be as follows:

Lot size (yards)	Sample size (sample units)
800 or less	2
801 up to and including 22,000	3
22,001 and over	5

The lot shall be unacceptable if one or more sample units fail to meet any requirement specified. The sample unit shall be as follows:

a. For types I, Ia, II and III webbing - class R, 8 yards; class L, 14 yards of the finished webbing, and for both classes, 1/2 yard of the webbing prior to treatment.

b. For all other types - class R, 16 yards; class L, 25 yards of the finished webbing, and for both classes, 1/2 yard of the webbing prior to treatment.

TABLE III. End item tests

Characteristic	Requirement paragraph	Test method	No. of determinations per sample unit	Results reported as
Class R:				
Impregnation material	3.2.1	1/	-	-
Breaking strength	3.2.1.1	4108	5	Individual results calculated to nearest 1.0 lb
Resistance to abrasion	3.2.1.2	5309 and 4108	5	Average of determinations calculated to nearest 1.0 lb then 1.0 percent
Weight	3.2.1.3	5041 2/	3	Average of determinations calculated to nearest 0.01 oz. per linear yard
Thickness	3.2.1.4	5030	5	Average of determinations calculated to nearest 0.001 inch
Extractable matter:				
Polyvinyl butyral	3.2.1.5	4.5.1	2	Average of 2 determinations to nearest 0.1 percent
Resin TR-5418-3 or Resin Solucote 1013	3.2.1.5	1/	-	-

TABLE III. End item tests - Continued

Characteristic	Requirement paragraph	Test method	No. of determinations per sample unit	Results reported as
Class R - continued				
Colorfastness to:				
Light	3.3.2	5660	-	-
Laundering	3.3.2	5614	-	-
Class L:				
Impregnation material	3.2.2	1/	-	-
Breaking strength	3.2.2.1	4108	5	Individual results calculated to nearest 1.0 lb
Resistance to abrasion	3.2.2.2	4108 and 5309	5	Average of determinations calculated to nearest 1.0 lb then 1.0 percent
After accelerated aging	3.2.2.3	4108 and 5850	5	Average of determinations calculated to nearest 1.0 lb then to nearest 1.0 percent loss from untreated, aged results
Stickiness or gumming	3.2.2.3	4.5.4 3/	5	Pass or fail for each specimen tested
Weight	3.2.2.4	5041 3/	3	Average of determinations calculated to nearest 0.01 oz. per linear yard

TABLE III. End item tests - Continued

Characteristic	Requirement paragraph	Test method	No. of determinations per sample unit	Results reported as
Class L - continued				
Thickness	3.2.2.5	5030	5	Average of determinations calculated to nearest 0.001 inch
Stiffness at -65°F	3.2.2.6.1	4.5.2 and 5206	5	Determinations calculated to nearest 0.1 inch
Stiffness after accelerated aging at -65°F	3.2.2.6.2	4.5.3 and 5206	5	Determinations calculated to nearest 1.0 percent
Colorfastness to:				
Light	3.3.2	5660	-	-
Laundering	3.3.2	5614	-	-

1/ A certificate of compliance shall be submitted and will be acceptable for the stated requirement.

2/ Except that a 3-yard specimen shall be accurately measured in the relaxed state, cut, and weighed.

3/ The specimens used for determining breaking strength after accelerated aging shall be evaluated for these characteristics.

4.4.4 Packaging inspection. The examination shall be in accordance with the quality assurance provisions of MIL-P-43334.

4.4.5 Palletization examination. The examination shall be in accordance with the quality assurance provisions of MIL-P-43334.

4.5 Methods of inspection.

4.5.1 Extractable matter (class R). The extractable matter shall be determined on a specimen of approximately 5 grams of the treated webbing. The test specimen, after separation of the warp, binder (when applicable) and filling yarns, shall be dried to constant weight in a weighing bottle at a temperature of 220° ± 2°F, and the weight recorded. The dry specimen shall be placed in a Soxhlet extractor and subjected to a 6 hour extraction with methylethyl-ketone. The test specimen shall be removed, air dried, and dried to constant weight in a weighing bottle at 220° ± 2°F. The final dry weight shall be recorded.

$$\text{Percent extractable matter} = \frac{\text{Loss in weight on extraction}}{\text{Original dry weight of sample}} \times 100$$

* 4.5.2 Stiffness at -65°F (class L). Specimens of webbing brought to equilibrium under standard conditions shall be placed in a cold chamber and maintained at -65° ± 2°F for 4 hours. At the end of the exposure period, the specimens while still at the -65°F, shall be tested for stiffness in accordance with Method 5206; results obtained, and the difference in inches calculated. The results shall be reported to the nearest 0.1 inch.

4.5.3 Stiffness at -65°F after accelerated aging (class L). Specimens of webbing after accelerated aging in accordance with Method 5850, having been brought to equilibrium with standard conditions, shall be placed in a cold chamber and maintained at -65°F ± 2°F for 4 hours. At the end of the exposure period, the specimens shall be tested while still at the -65°F conditions, for stiffness in accordance with Method 5206. Specimens of unaged treated webbing shall be subjected to and tested at the -65°F temperature as specified above; results shall be obtained for the aged and unaged, and percent change calculated.

4.5.4 Stickiness or gumming. After removal from the oven (see 4.5.3), the specimen shall be immediately placed across the center of a 15 centimeter diameter circular standard filter paper, Schleicher and Schuell No. 596 or equal, (see 6.6) on a glass plate. A 1/4 inch glass plate 8 inches square shall be placed on top of the specimen and loaded at the center with a 2,000 gram weight. After 10 minutes the weight and upper plate shall be removed. The webbing shall then be grasped at each end just outside the area in contact with the filter paper, and with enough tension to keep it straight, carefully lifted. If the filter paper lifts from the lower glass plate, the specimen shall be considered as failing the requirement.

5. PACKAGING

5.1 Put-up and preservation. Put-up and preservation shall be level A or Commercial, as specified (see 6.2).

5.1.1 Levels A and Commercial. Webbing, put up as specified, shall be packaged in accordance with the applicable requirements of MIL-P-43334.

5.2 Packing. Packing shall be level A, B, or Commercial as specified (see 6.2).

5.2.1 Levels A, B, or Commercial. Webbing shall be packed in accordance with the applicable requirements of MIL-P-43334.

* 5.3 Palletization. When required (see 6.2), palletization shall be in accordance with the applicable requirements of MIL-P-43334.

5.4 Marking. In addition to any special marking required by the contract or purchase order, shipments shall be marked in accordance with MIL-P-43334.

6. NOTES

6.1 Intended use. The webbing is intended for use in parachutes and their accessories, tow target reinforcement, safety belts, bomb hoists and slings, tie-down equipment, and overrun barrier.

6.2 Ordering data. Acquisition documents should specify the following:

a. Title, number, and date of this document.
b. Class required (see 1.2).
c. When a first article is required (see 3.1, 4.3 and 6.4).
d. Title, number, and date of document governing untreated webbing and type or width, as applicable, of webbing to be treated (see 3.2).
e. Color required (see 3.3).
f. Length of roll required (if other than specified in 3.4).
g. Selection of applicable levels of put-up, preservation, and packing (see 5.1 and 5.2).
h. When palletization is required (see 5.3).

6.3 Standard sample. For access to samples, address the contracting activity issuing the invitation for bids (see 3.3).

6.4 First article. When a first article is required, it shall be inspected and approved under the appropriate provisions of FAR 52.209. The first article should be a preproduction sample. The contracting officer should specify the appropriate type of first article and the number of units to be furnished. The contracting officer should include specific instructions in all acquisition instruments regarding arrangements for selection, inspection, and approval of the first article

6.5 Recycled material. It is encouraged that recycled material be used when practical as long as it meets the requirements of this document (see 3.2)

6.6 Curing time. Curing of the resin impregnated webbing has been accomplished in the temperature range of 240° to 360°F (see 3.2.1).

* 6.7 Resin. Resin TR-5418-3 may be obtained from the Spraylat Corporation, 715 South Columbus Avenue, Mount Vernon, NY 10550. Resin Solucote 1013 may be obtained from Soluol Chemical Co., Inc., Green Hill and Market Streets, P.O. Box 112, West Warwick, RI 02893.

* 6.8 Filter paper. Standard filter paper as used in 4.5.4 can be obtained from Schleicher and Schuell, 10 Optical Ave., Keene, NH 03431.

6.9 Testing data. When the treated webbing is procured, it is not necessary to submit complete test reports for the untreated webbing as covered by MIL-W-4088 or MIL-W-17337. Unless otherwise specified in the contract or purchase order, only the test data covered by this document will be required for procurement of this treated webbing.

6.10 Subject term (key word) listing.

Parachutes
Webbing, impregnated
Webbing, woven nylon

6.11 Changes from previous issue. The margins of this document are marked with an asterisk (*) to indicate where changes (additions, modifications, corrections, deletions) from the previous issue were made. This was done as a convenience only, and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content, as written, irrespective of the marginal notations and relationship to the last previous issue.

Custodians:

Army - GL
Navy - AS
Air Force - 99

Review activities:

Army - MD, EA, AR
Navy - NU, OS
Air Force - 82
DLA - CT

User activities:

Navy - SH, MC
Air Force - 45

Preparing activity:

Army - GL

Project No. 8305-0203

INSTRUCTIONS. In a continuing effort to make our standardization documents better, the DoD provides this form for use in submitting comments and suggestions for improvements. All users of military standardization documents are invited to provide suggestions. This form may be detached, folded along the lines indicated, taped along the loose edge *(DO NOT STAPLE)*, and mailed. In block 5, be as specific as possible about particular problem areas such as wording which required interpretation, was too rigid, restrictive, loose, ambiguous, or was incompatible, and give proposed wording changes which would alleviate the problems. Enter in block 6 any remarks not related to a specific paragraph of the document. If block 7 is filled out, an acknowledgement will be mailed to you within 30 days to let you know that your comments were received and are being considered.

NOTE. This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

(Fold along this line)

(Fold along this line)

DEPARTMENT OF THE ARMY

US Army Natick Research, Development, and
Engineering Center
Natick, MA 01760-5014

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE $300
STRNC-ES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO 12062 WASHINGTON D C
POSTAGE WILL BE PAID BY THE DEPARTMENT OF THE ARMY

Commander
US Army Natick Research, Development,
and Engineering Center
ATTN: STRNC-ES
Box 1-A
Natick, MA 01760-501-

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1 DOCUMENT NUMBER	2 DOCUMENT TITLE
MIL-W-27265E	Webbing, Textile, Woven Nylon Impregnated

3a NAME OF SUBMITTING ORGANIZATION	4 TYPE OF ORGANIZATION *(Mark one)*
	☐ VENDOR
b ADDRESS *(Street, City, State, ZIP Code)*	☐ USER
	☐ MANUFACTURER
	☐ OTHER *(Specify)* _____

5 PROBLEM AREAS

a. Paragraph Number and Wording

b. Recommended Wording

c. Reason/Rationale for Recommendation

6 REMARKS

7a NAME OF SUBMITTER *(Last, First, MI)* – Optional	b WORK TELEPHONE NUMBER *(Include Area Code)* – Optional
c MAILING ADDRESS *(Street, City, State, ZIP Code)* – Optional	8 DATE OF SUBMISSION *(YYMMDD)*

DD FORM 1426 PREVIOUS EDITION IS OBSOLETE