

DRAFT UGANDA STANDARD

DUS EAS 359

First Edition
2015-mm-dd

Pneumatic tyres for light trucks — Specification

DRAFT UGANDA STANDARD ON PUBLIC REVIEW



Reference number
DUS EAS 359: 2004

© UNBS 2015

Compliance with this standard does not, of itself confer immunity from legal obligations

A Uganda Standard does not purport to include all necessary provisions of a contract. Users are responsible for its correct application

© UNBS 2015

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilised in any form or by any means, electronic or mechanical, including photocopying and microfilm, without prior written permission from UNBS.

Requests for permission to reproduce this document should be addressed to

The Executive Director
Uganda National Bureau of Standards
P.O. Box 6329
Kampala
Uganda
Tel: 256 41 505 995
Fax: 256 41 286 123
E-mail: unbs@infocom.co.ug
Web: www.unbs.go.ug

National foreword

Uganda National Bureau of Standards (UNBS) is a parastatal under the Ministry of Trade, Industry and Cooperatives established under Cap 327, of the Laws of Uganda, as amended. UNBS is mandated to co-ordinate the elaboration of standards and is

- (a) a member of International Organisation for Standardisation (ISO) and
- (b) a contact point for the WHO/FAO Codex Alimentarius Commission on Food Standards, and
- (c) the National Enquiry Point on TBT Agreement of the World Trade Organisation (WTO).

The work of preparing Uganda Standards is carried out through Technical Committees. A Technical Committee is established to deliberate on standards in a given field or area and consists of representatives of consumers, traders, academicians, manufacturers, government and other stakeholders.

Draft Uganda Standards adopted by the Technical Committee are widely circulated to stakeholders and the general public for comments. The committee reviews the comments before recommending the draft standards for approval and declaration as Uganda Standards by the National Standards Council.

This Draft Uganda Standard, DUS EAS 359: 2004, *Pneumatic tyres for light trucks — Specification*, is identical with and has been reproduced from an East African Standard, EAS 359: 2004, *Pneumatic tyres for light trucks — Specification*, and is being proposed for adoption as a Uganda Standard.

This standard cancels and replaces US 515:2004, *Specification for new pneumatic tyres — Light trucks*.

This Uganda Standard, DUS EAS 359: 2004, has been developed by the Transport and communication standards Technical Committee (UNBS/TC 8).

Wherever the words, "East African Standard" appear, they should be replaced by "Uganda Standard."



EAS 359:2004

ICS 83.160.10

HS 4011.20;

HS 4011.20.10 (radial)

HS 4011.20.90 (other)

EAST AFRICAN STANDARD

Pneumatic tyres for light trucks — Specification

DRAFT UGANDA STANDARD ON PUBLIC REVIEW

EAST AFRICAN COMMUNITY

Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in East Africa. It is envisaged that through harmonized standardization, trade barriers which are encountered when goods and services are exchanged within the Community will be removed.

In order to achieve this objective, the Partner States in the Community through their National Bureaux of Standards, have established an East African Standards Committee.

The committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the procedures of the Community.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

© East African Community 2004 — All rights reserved*

East African Community

P O Box 1096

Arusha

Tanzania

Tel: 255 27 2504253/8

Fax: 255-27-2504481/2504255

E-Mail: eac@eachq.org

Web: www.each.int

* © 2004 EAC — All rights of exploitation in any form and by any means reserved worldwide for EAC Partner States' NSBs.

Introduction

This East African Standard has been prepared in order to give the necessary specifications and requirements for test of pneumatic tyres. It provides important information to be observed for improvement of motor vehicle safety in the country.

In reporting the results of a test made in accordance with this East African Standard, if the final value, observed or calculated is to be rounded off, it shall be done in accordance with EAS 124.

In the preparation of this East African Standard, assistance has been derived from the following documents:

BS AU 50-1.2.1a:1995, *Tyres and wheels — Specification for metric series tyres — Commercial vehicle tyres*, published by the British Standards Institution.

ISO 4209-1:2001, *Truck and bus tyres and rims (metric series) — Part 1: Tyres*

ISO 10454, *Truck and bus tyres — Verifying tyre capabilities — Laboratory test methods*.

DRAFT UGANDA STANDARD ON PUBLIC REVIEW

DRAFT UGANDA STANDARD ON PUBLIC REVIEW

Pneumatic tyres for light trucks — Specification

1 Scope

This East African Standard specifies tyre dimensions, designation, marking requirements and load ratings. It also gives laboratory test requirements for bead unseating, strength and endurance performance for light truck tyres. This East African Standard also specifies sampling methods and disposition of non conforming tyres.

2 Application

This East African Standard applies to all pneumatic light truck tyres with both “tube type and tubeless” of radial and bias constructions. It does not apply to any tyre that has been reconditioned or altered so as to render it impossible for use or repaired for use as part of motor vehicle equipment.

For the purposes of this East African Standard, light truck tyre is considered to be a tyre for commercial and light truck vans with carrying capacity of up to 1 — 5 tons, ply rating from 6 — 14, rim size from 10” — 17.5” and load index from 81 — 144 (for radial tyres having description suffix “C”).

3 Normative references

ISO 4223-1, *Definitions of some terms used in the tyre industry — Part 1: Pneumatic tyres*

ISO 10191:1995 – TW – 2B/4, *Methods of test for verifying tyre capabilities*, published by the International Organization for Standardization

BS AU 50-1.2.4:1994, *Method of test for verifying tyre capabilities*, published by the British Standard Automobile Series

ETRTO Standard manual:2001, *Standards for tyres / rims/ valves for ground vehicles — The European tyre and rim technical organization (E.T.R.T.O.)*

ETRTO Engineering design information:2001, *The European tyre and rim technical organization E.T.R.T.O. Design guides and engineering data*

JATMA year book (tyres standards):2001 The Japan automobile tyre manufacturers association, Inc

EAS 357, *Pneumatic tyres for trucks and buses — Specification*

EAS 124, *Rounding off numerical values*

The tyre and rim association inc. year book: 2000 – TRA manual

4 Terminology

For the purposes of this East African Standard, the following definitions shall apply:

4.1

approved rim contour

an Approved rim contour is one agreed by ETRTO/ TRA/JATMA members for use with a specific tyre size designation

4.2

bead

that part of the tyre which is shaped to fit the rim. It has a core made of one or several essentially inextensible strands with the plies wrapped around the core

4.3

bead flange and bead seat

the parts of the rim which support the tyre

4.4

bead separation

breakdown of bond between components in the bead area

4.5

belt or bracing ply – radial tyre

a layer of material underneath the tread, laid substantially in the direction of the tread center-line that restricts the carcass in a circumferential direction

4.6

bias belted tyre

a pneumatic tyre structure of bias ply (diagonal) type the carcass being restricted by a substantially inextensible circumferential belt – construction code “B”

4.7

bias ply tyre

a pneumatic tyre in which the ply cords that extend form the beads and are laid at alternate angles substantially less than 90° to the centerline of tread- construction code “B”

4.8

beaker- diagonal tyre

an intermediate ply between carcass and tread centerline of the tread

4.9

carcass

the rubber- bonded cord structure of a tyre integral with bead, which contains the inflation pressure

4.10

chunking

breaking away of pieces of the thread

4.11

cord

textile or non – textiles strands (threads) used in various components of the tyre carcass, plies, belt, breakers, etc

4.12

cord separation

cord parting from adjacent rubber compounds

4.13

cracking

any parting within the tread, sidewall or innerliner of the tyre extending to cord material

4.14

cyclic

service condition marked on earthmoving equipment tyres in ‘transport and /or loading’

4.15

design tyre dimension

the figures or values used for tyre design purposes

4.16

diagonal (bias ply) tyre

describes a pneumatic tyre structure in which the ply cords extend to the beads and are laid at alternate angles substantially less than 90° to the centerline of the tread - construction code “D” or “_”

4.17**groove**

the space between two adjacent tread ribs

4.18**grown Tyre**

a tyre which has undergone expansion due to use in service

4.19**gutter**

the groove in the rim base in which the rim parts, such as the spring lock ring or detachable spring flange, fit and are retained by the gutter tip

4.20**implement**

Tyres designed primarily for agricultural machines or implements (vehicles in category S) or for agricultural trailers (vehicles in category R). However they may also equip either front steering wheels and drive wheels of agricultural and forestry tractors (vehicles in category S). They are not suitable for sustained high torque service

4.21**innerliner**

the layers forming the inside surface of a tubeless tyre that contains the inflating medium within the tyre

4.22**innerliner separation**

parting of innerliner from cord material in the carcass

4.23**inflation pressure**

the pressure taken with the tyre at ambient temperature and does not include any pressure build up due to tyre usage

4.24**load capacity**

the maximum load a tyre is permitted to carry under specified operating conditions

4.25**load index**

a numerical code associated with the maximum load a tyre can carry at the speed indicated by its speed symbol under service conditions specified by the tyre manufacturer

4.26**ply rating**

an index of casing strength, not necessarily representing number of cord plies in a tyre

4.27**maximum overall (grown) diameter in service dC,**

the maximum overall diameter plus manufacturing tolerances and tolerances for service growth

4.28**maximum tyre dimensions in service**

inflated tyre dimensions including permanent growth in service

4.29**maximum load rating**

maximum load that the tyre is rated to carry in single formation at the reference speed

4.30

maximum permissible inflation pressure

maximum cold inflation pressure to which a tyre may be inflated. It does not include build up due to tyre usage

4.31

measuring rim

the rim specified by the relevant sub – committee for the measurement of the tyre

4.32

measuring rim width

linear distance between the rim flanges of the measuring rim

4.33

moped (or cyclomoteur or ciclomotore)

motorcycle tyres designed for motorcycles having a speed capability less than or 50 km/h

4.34

new tyre

a tyre which has neither been used nor subjected to retreading operation

4.35

nominal aspect ratio

one hundred times the ratio of the section height to the section width of the tyre on its theoretical rim

4.36

nominal aspect ratio design

one hundred times the ratio of the design section height to the nominal section width (h/s). For some existing code designated series the value shown is only approximate

4.37

nominal rim diameter

the nominal rim diameter is a size code figure for reference purposes only, as indicated in the tyre and rim size designation

4.38

nominal section width

the section width of an inflated tyre mounted on its theoretical rim and indicated in the tyre size designation

4.39

not for highway use (NHS)

motorcycle tyres designed for off-the-road applications. They must not be used on the public highway

4.40

open splice

any parting at any junction of tread, sidewall or innerliner that extends to cord material

4.41

overall diameter

the diameter of an inflated tyre at the outermost surface of the tread

4.42

overall width

the linear distance between the outsides of the sidewalls of an inflated tyre including elevations due to labeling (markings), decorations, and protective bands or ribs

4.43

ply

a layer of rubber - coated parallel cords.

4.44**ply separation**

parting of rubber compound between adjacent plies.

4.45**play rating**

index of tyre strength often designated as PR

4.46**pneumatic tyre**

a mechanical device made out of rubber, chemicals, fabric and steel or other material, which when mounted on an automotive wheel provides traction and contains the gas or fluid that sustains the total load

4.47**radial ply tyre**

a pneumatic tyre in which the ply cords extend to the beads and are laid substantially at 90 degrees to the centerline of the tread

4.48**regroovable**

commercial vehicle tyres designed with sufficient undertread to allow a subsequent re-grooving of the original tread pattern

4.49**reinforced (or REINF)**

passenger car tyres and/or motorcycle tyres designed for loads and inflation pressures higher than the standard version

4.50**retreaded tyre**

a tyre to which a new tread has been applied to extend the useful life of the tyre

4.51**rim**

that part of the wheel on which the tyre or tyres and tube assembly is mounted and supported

4.52**rim width**

the linear distance between the flanges of the rim

4.53**road**

service description marked on radial construction earthmoving equipment tyres in highway service

4.54**section height**

half the difference between the overall diameter and the nominal rim diameter

4.55**section width**

the linear distance between the outsides of the sidewalls of an inflated tyre excluding elevations due to labeling (markings), decorations, or protective bands or ribs

4.56**service description**

in addition to the Tyre Size Designation, a tyre may be identified by a Service Description consisting of a load index (or two load indices in the case of single/dual fitments) and a speed symbol

EAS 358:2004

4.57

sidewall

the part of the pneumatic tyre between the tread and the bead

4.58

sidewall rubber

the rubber layer on the sidewall of the tyre and over the carcass, which may include ornamental or protective ribs and fittings lines

4.59

sidewall separation

parting of the rubber compound from the cord material in the sidewall

4.60

size factor

the sum of the section width and the outer diameter of a tyre determined on the test rim

4.61

special tread tyre (ET)

tyre whose tread pattern is primarily designed to provide satisfactory performance under special service conditions (e.g. mixed, use, on and off-road, city bus, etc.)

4.62

specified rim diameter

the diameter at the intersection of the planes of the rim bead seat and the rim flange depending on the rim design, it can be either smaller or larger than the nominal rim diameter

4.63

speed category

a code indicating tyre speed capabilities

4.64

solid

rubber solid tyres for pneumatic tyre rims

4.65

temporary use only

passenger car tyres intended for temporary use as a spare in one position only

4.66

test rim

any rim on which the tyre may be fitted that conforms to the dimensions of the recommended rims for the particular tyre designation and type

4.67

test drum speed

peripheral speed of the test drum

4.68

tread rib

a tread section that runs circumferentially around the tyre

4.69

tread separation

pulling away of the tread from the tyre carcass

4.70

theoretical rim

a rim having a width of specified ratio to the nominal section width

4.71

tread

the part of a pneumatic tyre which normally comes in contact with the ground / road

4.72

tubeless

tyres specifically designed for fitment without an inner tube on appropriate rims

4.73

tyre measurement

measurements taken on the unloaded tyre mounted on its measuring rim at the recommended inflation pressure and conditioning

4.74

valve aperture

the hole or slot in the rim which accommodates the valve for tyre inflation

4.75

wheel

a rotating load carrying member between the tyre and the axle, usually consisting of two major parts, the rim and the wheel center

4.76

well

that part of the rim so located with sufficient depth and width to enable the beads to be mounted and dismantled over the mounting side rim flange or bead seat taper

Tyre codes used in tyre industries

4.77

C

commercial vehicle tyres for service on light duty vehicles

4.78

CT

special design passenger car tyres suitable for fitment on CT rim only

4.79

DP

tyres specifically designed for mud and snow (Winter). MS, M&S, M.S and M-S or M+S are also used

4.80

extra load (or XL)

passenger car tyres and/or motor- cycle tyres designed for loads and inflation pressures higher than the standard version

4.81

S

tyre intended for temporary use as spare (no more than one in use at a time)

4.82

T

tyres intended for temporary use as a spare, in one position only at a time, with inflation pressures higher than those of Standard or Reinforced tyres

4.83

*

symbols used to identify different versions load capacity/ inflation pressure of earthmoving equipment tyres in radial construction

EAS 358:2004

4.84

FRT

commercial vehicle tyres restricted to the equipment of non-driven axles, excluding motor vehicle front steering axles

4.85

IMP

tyres designed primarily for agricultural machines or implements

4.86

M/C

motorcycle tyres which are designed for use on M/C motorcycle rims having a bead seat diameter which differs from that of rims with the same designation, designed for passenger car, commercial vehicles and agricultural applications

4.87

M+S

tyres specifically designed for mud and snow (Winter). MS, M&S, M.S and M-S or DP are also used

4.88

IND

agricultural tyres for traction wheels for construction applications, with load capacities and inflation pressures which differ from those for tyres with the same size designation for use on agricultural tractors

4.89

MPT

commercial vehicle tyres for service on multipurpose trucks

4.90

MST

motorcycle tyres designed for special service having a wider tread than equivalent sizes with the same tyre size designation

4.91

PR

identifies different versions (load capacity/inflation pressure) of tyres having the same size designation

4.92

TG (or GRADER)

existing diagonal construction grader service tyres

5 General requirements

5.1 Materials

The basic compound used in the construction, shall be of natural rubber, synthetic rubber or a combination thereof.

5.2 Ozone resistance

Each tyre as part of production shall contain sufficient anti-oxidants and anti-ozonants to provide standard commercial resistance to weathering.

5.3 Temperature ability

Each tyre shall have an inherent capability of acceptable performance in ambient air temperature ranging from -5 °C to 50 °C.

5.4 Workmanship

A Tyre covered under this standard shall show no evidence of poor workmanship or any imperfections which may impair serviceability.

5.5 Age of rubber

Tyres covered under this standard shall not be more than 5 years from the date of manufacture.

5.6 Dimensions labeling

Nominal section width of the tyres shall be indicated in millimeters, ending with 0 or 5 such that in any one series of tyres with same nominal aspect ratio, the values shall end with 0 or with 5. An equivalent marking in inches is permitted. The rim diameter shall always be indicated in inches to the nearest 0.5".

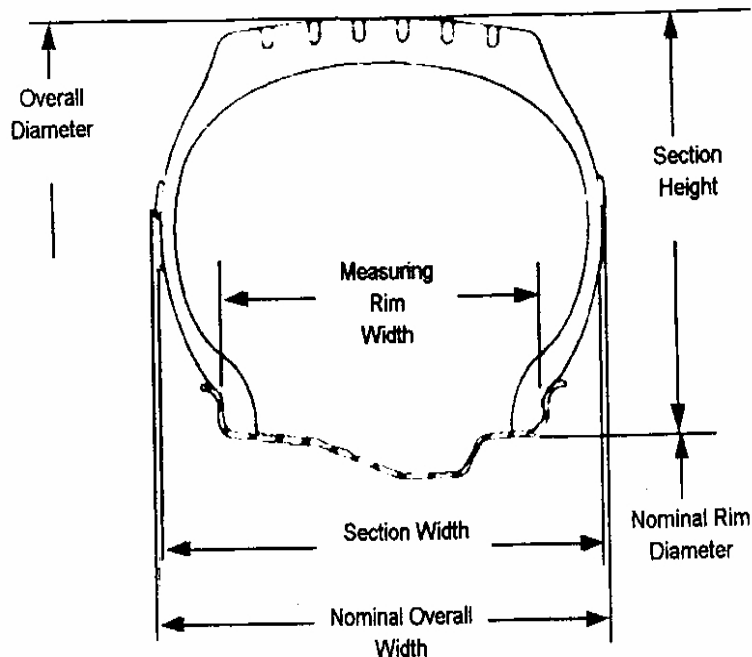
6 Designation and marking

Each tyre shall have permanently moulded into or onto each sidewalls in letters and numbers not less than 2 mm deep or protruding out with the information shown below:

6.1 Size designation

6.1.1 Each tyre shall have one size designation in metric except that equivalent inch size designation may be used. The characteristics shall be indicated as follows:

Nominal section width	and/or	Nominal aspect ratio	Tyre construction code	Nominal rim diameter
-----------------------	--------	----------------------	------------------------	----------------------



NOTE All low profile tyres (Aspect Ratio of 70 and below) shall have nominal aspect ratio.

6.1.2 Nominal section width of the tyre shall be indicated in millimeters, ending either in 0 or 5, so that in any one series of the tyres with the same nominal aspect ratio, the values shall all end with 0 or end with 5. An equivalent marking in inch is permitted.

For sizes mounted on 5° tapered (code- designated) rims, the nominal section width shall end with 5.

6.1.3 Nominal aspect ratio (H/S) - 100 times the ratio of the section height to the section width of the tyre on its theoretical rim, shall be expressed as a percentage and in multiple of 5.

NOTE Theoretical rim is a rim having a width of specified ratio to the nominal section width.

6.2 Tyre structure/construction code

The tyre construction code shall be as follows

B for bias – belted construction

D/- for diagonal construction

R for radial ply construction

6.3 Service description

6.3.1 The word TUBELESS shall appear on the tyre to characterize tyres that can be used without a tube.

Where no TUBELESS appears on the tyre sidewalls, tyres shall be intended for fitment with and appropriate inner tube.

6.3.2 Load index

The maximum tyre load capacity corresponding to the service conditions specified by the tyre manufacturer, shall be indicated by a load index from Table 6. This indication is understood to be per tyre for a single mounting.

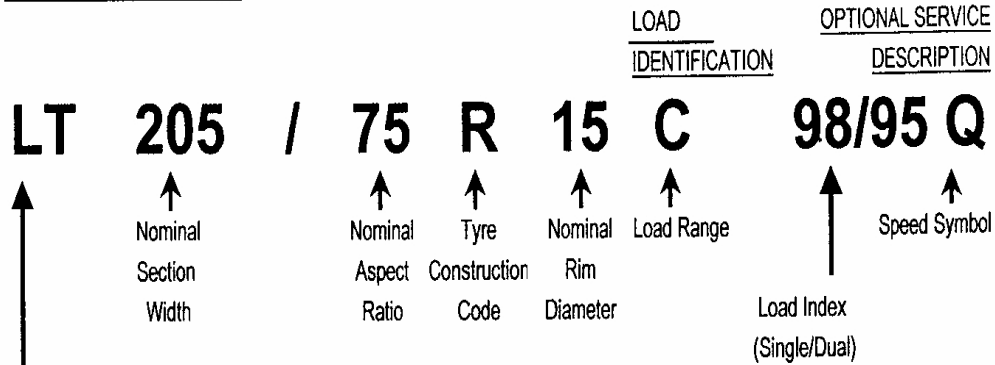
6.4 Marking

Each tyre shall be labeled with a recognized quality / safety mark to show that the tyre conforms to respective national, regional or international standard e.g DOT, EC, KBS, TBS etc. The tyre may also be marked with any other identification assigned to the manufacturer.

DRAFT

EXAMPLE

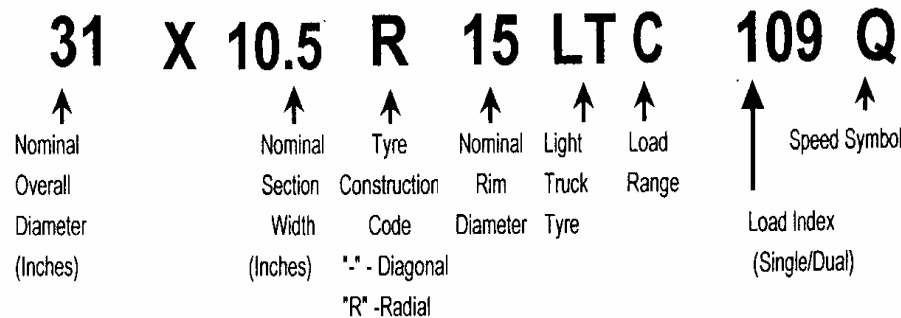
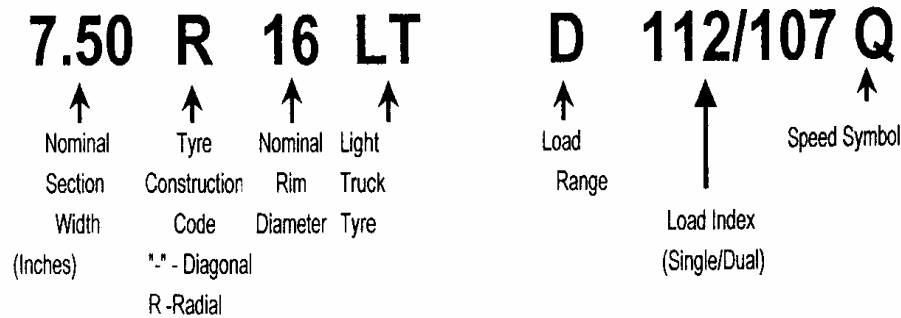
Metric Size designated tyres



"LT" Designates Tyre primarily intended for service on Light Trucks.
 ST Designates a special tyre for trailers in highway service.

CONVENTIONAL SIZE DESIGNATED TYRES:

Light Truck Tyres



7 Calculation of tyre dimensions

7.1 Calculation of design tyre dimensions

7.1.1 Theoretical rim width (R_{th})

$$R_{th} = K_1 S_N \quad \text{Formula (1)}$$

K_1 Theoretical rim width;

S_N Nominal section width;

R_{th} Ratio;

$K_1 = 0.7$ for tyres having nominal aspect ratio (H/S) from 50 to 95 inclusive;

$K_1 = 0.85$ for tyres having nominal aspect ratio (H/S) from 30 to 45 inclusive.

No rounding is to be performed after calculation of theoretical rim width.

7.1.2 Measurement of rim width (R_m)

R_m Standardized rim width closest to the theoretical or to the calculated measuring rim width if it differs from the theoretical.

7.1.3 Design section width (S)

$$S = S_N + K_2(R_m - R_{th.}) \quad \text{Formula (2)}$$

S Design section width;

S_N Nominal section width;

R_m Measuring rim width;

R_{th} Theoretical rim width.

$$K_2 = 0.4$$

7.1.4 Minimum section width (S_{min})

$$W_{min} = SC \quad \text{Formula (3)}$$

S - Design section width;

C - Coefficient for the tyre category.

7.1.5 Design section height (H)

$$H = S_N \cdot \frac{H/S}{100} \quad \text{Formula (4)}$$

H - Design section height;

S_N - Nominal section width;

H/S - Nominal aspect ratio (example: 60 series = 60).

7.1.6 Design tyre overall diameter (D_o)

$$D_o = D_r + 2H$$

Formula (5)

D_o - Design overall diameter;

H - Design section height;

D_r - Nominal rim diameter (see Note 3 below).

7.1.7 Maximum and minimum new tyre diameter (D_{omax} , D_{omin})

$$D_{omax} = D_r + 2H_b$$

Formula (6)

$$D_{omin} = D_r + 2H_d$$

Formula (7)

D_{omax} - Maximum new tyre outer diameter.

D_{omin} - Minimum new tyre outer diameter.

H - Design section height.

(D_{omax} D_{omin}) - Coefficient (\pm) to provide for design and manufacturing differences see Table 7.

D_r - Nominal rim diameter.

Rounding to the nearest millimeter, according to EAS 124(see clause 3), is to be performed.

7.2 Calculation of tyre dimensions in service**7.2.1 Maximum overall width in service (W_{max})**

$$W_{max} = Sa$$

Formula (8)

W_{max} - Maximum overall width in service.

S - Design section width.

a - Coefficient to provide for design and manufacturing differences and for the increase of the Design Section Width due to protective ribs, lettering, embellishments and growth due to service

See relevant sub-section for the tyre category concerned.

Round to the nearest millimeters, in accordance with EAS 124(see clause 3).

7.2.2 Maximum overall diameter in service ($D_{o,max}$).

$$D_{o,max} = D_r + 2H_b$$

Formula (9)

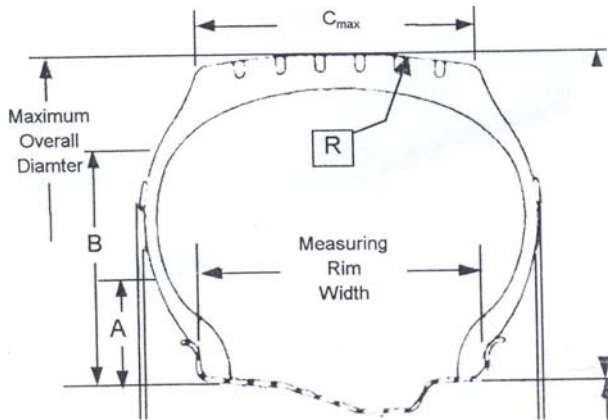
$D_{o,max}$ - Maximum overall diameter in service;

H - Design section height;

D_r - Nominal rim diameter.

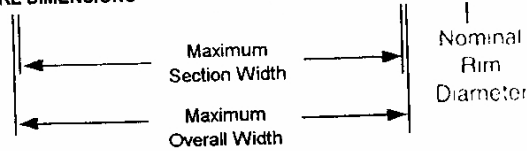
Rounding to the nearest millimeter, in accordance with EAS 124, is to be performed after final calculation.

7.2.3 Maximum section height in service(H)



REVIEW

7 CALCULATION OF TYRE DIMENSIONS



$$H = \frac{Domax - Dr}{2}$$

Formula (10)

$$A = 30\% \cdot H$$

Formula (11)

$$B = 70\% \cdot H$$

Formula (12)

$$C_{max} = X\% \cdot W_{max}$$

Formula (13)

$$R = Y\% \cdot W_{max}$$

Formula (14)

Aspect Ratio	X %	Y %
* 35 series*	95	1200
* 40 series*	95	1050
* 45 series*	95	930
* 50 series*	95	840
* 55 series*	95	765
* 60 series*	90	630
* 65 series*	90	580
* 70 series*	85	480
* 75 series*	80	395
* 80 series*	80	375

Domax - Maximum Overall Diameter in Service

$h_G = H - F_{hG}$ - Maximum in Service Section Height

H - Design Section Height (2)

F_{hG} - Coefficient to provide for design and manufacturing differences

Dr - Nominal Rim Diameter (see Note 3 below)

Wmin- Maximum Overall Width in Service (1)

8 Test requirements

8.1 Test sample

Two tyres with identical characteristics, e.g. size designation and service description or maximum load rating, ply rating and speed capability, shall comprise a test sample.

8.1.1 One tyre shall be used for the measurement of physical dimensions, resistance to bead unseating and strength in sequence.

8.1.2 A second tyre for the endurance test.

The pressures, loads, speeds and durations shall be as specified for each test method. Each test sample shall conform to the requirements specified in 6.2 to 6.5 as appropriate.

8.2 Test equipment

The test equipment consists of

8.2.1 Test drum, cylindrical driven flywheel (drum having a diameter of $1.7 \text{ m} \pm 2 \%$ or $2 \text{ m} \pm 2 \%$).

The surface of the drum shall be smooth steel and the width of the test surface shall be equal to or exceed the overall width of the test tyre. For the test drum, the loading device shall have a capacity of at least 5700 kg and the accuracy shall be within $\pm 1 \%$ of the full scale. For the test drum, the speed capability of the equipment shall be adequate for the requirements of the test methods. The accuracy of the test drum speed shall be within $+ 2 \text{ km/h}$ to $- 0 \text{ km/h}$.

8.2.2 Plunger, cylindrical steel plunger of sufficient length with a hemispherical end and of diameter as shown below:

Table 2 — Recommended pressures for measurement of tyre dimensions

Type	Pressure kPa
Standard load ap-type light load version	180
Extra load/reinforced version	220
T-type Temporary-use spare type	420

For the plunger equipment, the loading device shall permit gradual application of the force. Indicators of displacement and force provided shall have an accuracy within $\pm 1 \%$ of full scale. For the plunger equipment, the displacement speed shall be controlled with an accuracy within $\pm 3 \%$ of the full scale.

8.2.3 Bead unseating block

The bead unseating block loading device shall permit progressive application of the force. Indicators of displacement and force provided shall have an accuracy $\pm 1 \%$ of full scale. The displacement speed of the bead unseating block shall be controlled with an accuracy within $\pm 3 \%$ of the full scale.

8.2.4 Inflation pressure gauges, with a maximum scale value of at least 500 kPa with an accuracy within $\pm 1.5 \text{ kPa}$.

8.3 Testing

8.3.1 Non destructive testing

8.3.1.1 Physical dimensions measurement

The tyre physical dimensions shall be determined under uniform ambient conditions as follows:

8.3.1.1.1 Tyre preparation

The sample shall be mounted on a recommended test rim for that tyre size designation and inflated to the applicable pressures in single formation as shown in Tyre Dimension Table 2. Then the tyre shall be conditioned at ambient room temperature for a minimum of 24 h for bias construction and 3 h for radial construction. The pressure is then re-adjusted to the original value.

8.3.1.1.2 Test procedure

- a) The section width and overall width are callipered at six points approximately equally spaced around the tyre circumference. The average of the measurements of the section width and overall width respectively is recorded.
- b) The tyre overall diameter is determined by measuring the maximum circumference of the tyre and dividing this dimension by $\pi = 3.1416$.

The actual section width and overall width for each tyre measured in accordance with this procedure shall not be less or exceed the section width specified in the submission made by the manufacturer or in any standard tyre and rim matching information for its size designation and type, by more than 7 %.

8.3.1.2 Tubeless bead unseating test

This test applies to tubeless tyres only.

8.3.1.2.1 Preparation of tyre

Wash the tyre, dry it at the beads, and mount it without lubrication or adhesive on a clean, painted test rim. Mount the tyre on a test rim and inflate it to the pressure specified in Tyre Dimension Table 4.

8.3.1.2.2 Test procedure

Mount the tyre and rim assembly on a fixture.

Position the bead unseating block (8.2.3) against the tyre sidewall at a horizontal distance *P* as shown in Table 3.

Apply a force through the block to the tyre outer sidewall at a rate of 50 mm/min \pm 2.5 mm/min.

Table 3 — Distance *P* from bead unseating block

Nominal Rim Diameter code	Dimension <i>P</i>	
	T type temporary use spare tyre	All other tyres
10		216
12		241
13		254
14	226	267
15	239	279
16	251	292
17	269	305
18	290	318
19	305	330
290		229
315		241
340		254
365		267
390		279
415		292

Increase the force until the bead block unseats or until the prescribed value is reached Tables 4 and 5. Repeat the test at least four times at places approximately equally spaced around the tyre circumference.

8.3.1.2.3 Qualification criteria

When tested in accordance with 8.3.1.2.2, the applied force required to unseat the tyre bead at the point of contact shall not be less, in relation to the nominal section width of the tyre, than that shown in Table 2.

Table 4 — Bead unseating force

Nominal section, <i>S</i> , width mm	Force N
$S < 160$	6670
$160 \leq S < 205$	8890
$S \geq 205$	11120

For light truck and high pressure "temporary use spare" tyres, identified by a prefix *T* in the size designation, the force required to unseat the tyre bead shall not be less, in relation to the tyre load index, than that given in Table 4.

Table 5 — Bead unseating force for temporary use spare tyres

Load index	Force N
≤ 75	6670
76 to 92	8890
≥ 93	11120

8.3.2 Destructive testing

8.3.2.1 Strength test/ destructive test

8.3.2.1.1 Preparation of tyre

Mount the tyre on a test rim and inflate it to the pressure specified for maximum load rating in single formation or maximum dual load.

Maintain the assembly at test room temperature for at least 3 h for radial construction and 24 h for bias/diagonal construction.

8.3.2.1.2 Test procedure

- Readjust the tyre pressure to that specified in 8.3.2.1.1(a) and mount the assembly on a fixture.
- Position the plunger as near to the centerline as possible, avoiding penetration into the tread grooves and force the plunger perpendicularly into the tread at a rate of 50 mm/min \pm 2.5 mm/min.
- Record the force and penetration at the moment of breaking (see also 8.3.2.1.2 (g)) at each of five test points approximately equally spaced around the tyre circumference. Check the pressure before moving to the next test point.
- If the tyre fails to break before, the plunger is stopped on reaching the rim well, then the tyre is deemed to have passed the test at that point.
- Compute the breaking energy, *W*, in joules for each test point, except those considered by 8.3.2.1.2(d) by means of the following formula:

$$W = \frac{F \times P}{2000}$$

where

F is the force, in Newtons;

P is the penetration, in millimeters.

- f) Determine the breaking energy value for the tyre by computing the average of the values obtained.
- g) When an appropriate device which automatically evaluates the value of the energy W is available, the penetration can be stopped shortly after having achieved the prescribed value specified in Table 6.
- h) In the case of tubeless tyres, means may be provided to ensure the retention of the inflation pressure for the duration of the test.

8.3.2.1.3 Qualification criteria

- a) Each test sample shall meet at least the requirements for minimum breaking energy specified in Table 6, when tested in accordance with 8.3.2.1.2.

Table 6 — Minimum breaking energy

Load range	PR	Minimum breaking energy, J				
		Rim diameter code ≤12	Rim diameter code 13 and 14 tube type marked 'LT'	Other tyres marked "L T" Tubeless with rim diameter code 13 to 17.5 inclusive	Other tyres Tube type	Tubeless
A	2			226		-
B	4	68	-	294	-	-
C	6	136	192	362	768	576
D	8	203	271	514	893	734
E	10	271	384	576	1412	972
F	12	339	-	644	1785	1412
		407	-			
G	14			712	2282	1695

- b) For high pressure "temporary use spare" tyres, identified by a prefix T in the size designation, the energy required shall be
 - i) 295 J for tyres with a maximum load rating of 400 kg and above;
 - ii) 220 J for tyres with a maximum load rating below 400 kg.

8.3.2.2 Endurance test

8.3.2.2.1 Preparation of tyre

- a) Mount the tyre on a test rim and inflate it to the pressure specified in tyre dimension tables.
- b) Maintain the tyre and rim assembly at an ambient temperature of not less than 35 °C and not more than 41 °C for at least 3 h.

8.3.2.2.2 Test procedure

- a) Re-adjust the tyre pressure to the value specified in 8.3.2.1.1 (a) immediately before testing.

- b) Mount the tyre and rim assembly on a test axle so that the tyre may be pressed radially against the outer face of test drum.
- c) During that test, the ambient temperature at a distance of not less than 150 mm and not more than 1 m from the tyre, shall be at least 35 °C and not more than 41 °C. No provision shall be made for cooling the tyre during the test.
- d) Conduct each successive phase of the test without interruptions at the speed with loads and test periods as shown in;
- i) Table 7, for tyres with Load Index (single) up to 121 inclusive and speed symbol up to *P*.
 - ii) 8.3.2.2.3, for tyres with Load Index single up to speed symbols *Q* and above;
 - iii) Table 7, for tyres with Load Index (single) 122 and above.

Table 7 — Endurance test parameters

Tyres with Load Index (single)	Speed Symbol	Test drum speed* r/min.		Load as percentage of max. load rating			
		Radial tyres	Diagonal/Bias tyres	7h (period 1)	16h (period 2)	24h (period 3)	4h (period 4)
≤120	F	100	100				
	G	125	125				
	J	150	150	66	84	101	120
	K	175	175				
	L	200	175	70	88	106	120
	M	250	200				
	N	275	-	75**	97**	114	120
≥122	P	300	-				
	F	100	100				
	G	125	100				
	J	150	125				
	K	175	150	66	84	101	120
	M	225	-				

* Special tread tyres shall be tested at a speed equal to 85% of the speed prescribed for equivalent normal tyres.

** The load application times for period 1 and 2 are 4 hrs and 6 hrs respectively.

- e) Throughout the test, the inflation pressure shall not be corrected and the test loads shall be kept constant at the value corresponding to each test period.

8.3.2.2.3 Specific conditions for tyres with speed symbol *Q* and above.

- a) The load applied shall be
 - i) 90% of maximum load rating on 1.7 m test drum diameter.
 - ii) 92% of maximum load rating on 2.0 m test drum diameter.
- b) The initial test speed shall be equal to tyre's speed category minus 20 km/h.
- c) Operate the test equipment to bring the test drum speed up to the initial test speed for a period of 10 min.

- d) Operate the equipment with the test drum speed at the initial test speed for 10 min then at the initial test speed plus 10 km/h for at least 10 min.
- e) Finally operate the equipment for 30 min at the tyre's rated speed category.

Total duration for testing is 1 hr.

8.3.2.2.4 Qualification criteria

When the tyre has been subjected to the laboratory endurance test specified in 8.3.2.2, using a test rim and a valve which undergo no permanent deformation and allow no loss of air, there shall be no visual evidence of tread, sidewall, ply, cord, innerliner, belt or bead separation, chunking, open splices, cracking or broken cords.

The tyre pressure measured immediately after the test shall not be less than the initial pressure specified in 8.3.2.1.1a).

9 Test tyre sampling

9.1 Every shipment of the same size, brand, shall be accompanied with manufacturer test data.

9.2 Random sampling of subsequent shipment of the same size, brand, manufacturer shall be done to confirm compliance of manufacturer's test data. A minimum of three (3) test sample tyres per size, brand name, manufacturer, shall be taken for destructive tests.

9.3 Sampling shall be done at the port of entry and /or distribution point.

10 Non-conforming tyres

10.1 No tyre that is designed and manufactured for use on light trucks/commercial automobiles, that does not conform to the requirements of this standard shall be sold, offered for sale, introduced or delivered for introduction into, or imported into East Africa.

10.2 The National Standards Body shall conduct random market surveillance inspection to ensure non existence of illegally introduced/delivered tyres in the region and shall conform to clause 6 of this standard.

10.3 The National Standards Body shall take the responsibility of ensuring public awareness of the ban of non- conforming tyres.

11 Disposition of nonconforming tyres

11.1 To ensure that the consumer is protected from exposure to nonconforming tyres, the importer and/or manufacturers shall take the responsibility of shipping back to source of origin all non conforming consignments

11.2 If the nonconforming tyres are in the market, it shall be the responsibility of the local National Standard Body to ensure that consumers are protected from their use.

11.3 Testing

The responsibility for testing shall be on the National Standards Body or their assigned agencies.

12 Certification

Certification shall be done in accordance with the procedures of the National Standards Body. The procedures for certification shall be obtained from the National Standards Body. It shall be the responsibility of the local National Standard Body to ensure that the importers or manufacturers with a

“Certificate of Conformance” for the size, brand and manufacturer for a consignment meet the requirements of this standard.

At every tyre selling point, there shall be a certified true copy of certificate of conformance.

12.1 Test certificate validity

Certificate of conformance shall be valid for a period recommended after which the importer and/or manufacturer shall have to reapply for re-certification.

This certificate of conformance shall always remain a property of the issuing bureau and shall be returned to issuing bureau before a new one is issued.

12.2 Sample tyres for test

The local National Standards Body shall select for sample testing from the tyre sizes:

One size if an application has maximum of 5 sizes.

Two sizes if an application has between 6 and 10 sizes.

Three sizes if an application has 11 and more sizes.

These tyres shall be sent to the National Standards Body.

DRAFT UGANDA STANDARD ON PUBLIC REVIEW

Table 8 — Load Index

Load Index (LI)	TLCC kg	Load Index (LI)	TLCC kg	Load Index (LI)	TLCC kg	Load Index (LI)	TLCC kg	Load Index (LI)	TLCC kg	Load Index (LI)	TLCC kg	Load Index (LI)	TLCC kg
0	46	40	140	80	450	120	1 400	160	4 500	200	14 000	240	45 000
1	46,2	41	145	81	462	121	1 450	161	4 625	201	14 500	241	46 250
2	47,5	42	150	82	475	122	1 500	162	4 750	202	15 000	242	47 750
3	48,7	43	155	83	487	123	1 550	163	4 875	203	15 500	243	48 750
4	50	44	160	84	500	124	1 600	164	5 000	204	16 000	244	50 000
5	51,5	45	165	85	515	125	1 650	165	5 150	205	16 500	245	51 500
6	53	46	170	86	530	126	1 700	166	5 300	206	17 000	246	53 000
7	54,5	47	175	87	545	127	1 750	167	5 450	207	17 500	247	54 500
8	56	48	180	88	560	128	1 800	168	5 600	208	18 000	248	56 000
9	58	49	185	89	580	129	1 850	169	5 800	209	18 500	249	58 000
10	60	50	190	90	600	130	1 900	170	6 000	210	19 000	250	60 000
11	61,5	51	195	91	615	131	1 950	171	6 150	211	19 500	251	61 500
12	63	52	200	92	630	132	2 000	172	6 300	212	20 000	252	63 000
13	65	53	206	93	650	133	2 060	173	6 500	213	20 600	253	65 000
14	67	54	212	94	670	134	2 120	174	6 700	214	21 200	254	67 000
15	69	55	218	95	690	135	2 180	175	6 900	215	21 800	255	69 000
16	71	56	224	96	710	136	2 240	176	7 100	216	22 400	256	71 000
17	73	57	230	97	730	137	2 300	177	7 300	217	23 000	257	73 000
18	75	58	236	98	750	138	2 360	178	7 500	218	23 600	258	75 000
19	77,5	59	243	99	775	139	2 430	179	7 750	219	24 300	259	77 500
20	80	60	250	100	800	140	2 500	180	8 000	220	25 000	260	80 000
21	82,5	61	257	101	825	141	2 575	181	8 250	221	25 750	261	82 500
22	85	62	265	102	850	142	2 650	182	8 500	222	26 500	262	85 000
23	87,5	63	272	103	875	143	2 725	183	8 750	223	27 250	263	87 500
24	90	64	280	104	900	144	2 800	184	9 000	224	28 000	264	90 000
25	92,5	65	290	105	925	145	2 900	185	9 250	225	29 000	265	92 500
26	95	66	300	106	950	146	3 000	186	9 500	226	30 000	266	95 000
27	97,5	67	307	107	975	147	3 075	187	9 750	227	30 750	267	97 500
28	100	68	315	108	1 000	148	3 150	188	10 000	228	31 500	268	100 000
29	103	69	325	109	1 030	149	3 250	189	10 300	229	32 500	269	103 000
30	106	70	335	110	1 060	150	3 350	190	10 600	230	33 500	270	106 000
31	109	71	345	111	1 090	151	3 450	191	10 900	231	34 500	271	109 000
32	112	72	355	112	1 120	152	3 550	192	11 200	232	35 500	272	112 000
33	115	73	365	113	1 150	153	3 650	193	11 500	233	36 500	273	115 000
34	118	74	375	114	1 180	154	3 750	194	11 800	234	37 500	274	118 000
35	121	75	387	115	1 215	155	3 875	195	12 150	235	38 750	275	121 000
36	125	76	400	116	1 250	156	4 000	196	12 500	236	40 000	276	125 000
37	128	77	412	117	1 285	157	4 125	197	12 850	237	41 250	277	128 500
38	132	78	425	118	1 320	158	4 250	198	13 200	238	42 500	278	132 000
39	136	79	437	119	1 360	159	4 375	199	13 600	239	43 750	279	136 000

Table 9 — Pressure unit conversion table

QUANTITY	S.I. UNITS	OTHER UNITS
Length	m (metre)	1inch(") = 0.0254m (or 25.4mm) 1mile =1609m (or 1.609km)
Mass	kg (kilogramme)	1pound (lb) = 0.4536 kg
Pressure	Pa (pascal)	1bar* = 100 kPa 1 pound per square inch (p.s.i. Or lb/in ²) = 6.895 kPa 1 kg/cm ² = 98.066 kPa
Speed	m / s (metre per second)	1 km per hour (km/h)* = 0.27778 m/s 1 mile per hour (mph) = 0.4470 m/s (or 1.60935 km/h)
Non S.I. Unit to be retained for use specialised fields.		

kPa	bar	lb / in ² (p.s.i)	kg / cm ²
100	1.0	15	1.0
150	1.5	22	1.5
200	2.0	29	2.0
250	2.5	36	2.5
300	3.0	44	3.1
350	3.5	51	3.6
400	4.0	58	4.1
450	4.5	65	4.6
500	5.0	73	5.1
550	5.5	80	5.6
600	6.0	87	6.1
650	6.5	94	6.6
700	7.0	102	7.1
750	7.5	109	7.6
800	8.0	116	8.2
850	8.5	123	8.7
900	9.0	131	9.2
950	9.5	138	9.7
1000	10.0	145	10.2
1050	10.5	152	10.7
1100	11.0	160	11.2
1150	11.5	167	11.7
Nb: Values for p.s.i and kg/cm ² are rounded to the nearest practical unit.			

LIGHT TRUCK
TABLE LTM-3M
LIGHT TRUCK METRIC TIRES FOR TRUCKS, BUSES, TRAILERS
AND MULTIPURPOSE PASSENGER VEHICLES USED IN NORMAL HIGHWAY SERVICE
 TIRE MOUNTED ON 5° DROP CENTER RIMS

TIRE SIZE DESIGNATION	USAGE	TIRE LOAD LIMIT (kg) AT VARIOUS COLD INFLATION PRESSURE (kpa)						
		RADIAL PLY						
		250	300	350	400	450	500	
	DIAGONAL PLY, BIAS BELTED				350	400	450	500
		200	250	300				500
60 SERIES								
LT325/60R15	SINGLE	950(C)	960	1060(C) ¹¹⁰				
LT285/60R17	SINGLE	845	960	1060(C) ¹¹⁰				
70 SERIES								
LT215/70*14	DUAL	525	590	670(C) ⁹⁴				
	SINGLE	575	650	730(C) ⁹⁷				
LT245/70*15	DUAL	660	750	850(C) ¹⁰²				
	SINGLE	725	825	929(C) ¹⁰⁵				
LT255/70*15	DUAL	700	795	875(C) ¹⁰³				
	SINGLE	770	875	975(C) ¹⁰⁷				
LT265/70*15	DUAL	740	840	925(C) ¹⁰⁵				
	SINGLE	815	925	1030(C) ¹⁰⁹				
LT285/70*15	DUAL	830	935	1060(C) ¹¹⁰	1145	1250(D) ¹¹⁸		
	SINGLE	910	1030	1150(C) ¹¹³	1260	1360(D) ¹¹⁸		
LT315/70*15	DUAL	975(C) ¹⁰⁷						
	SINGLE	1060(C) ¹¹⁶						
LT235/70*16	DUAL	645	735	825(C) ¹⁰¹				
	SINGLE	710	805	900(C) ¹⁰⁴				
LT255/70*16	DUAL	730	830	900(C) ¹⁰⁴	1010	1120(D) ¹¹²		
	SINGLE	800	910	1000(C) ¹⁰⁸	1110	1215(D) ¹¹⁵		
LT275/70*16	DUAL	815	930	1030(C) ¹⁰⁸	1130	1250(D) ¹¹⁶		
	SINGLE	895	1020	1120(C) ¹¹²	1240	1360(D) ¹¹⁸		
75 SERIES								
LT175/75*14	DUAL	405	460	515(C) ⁸⁵				
	SINGLE	445	505	560(C) ⁸⁸				
LT185/75*14	DUAL	440	500	560(C) ⁸⁸				
	SINGLE	485	550	615(C) ⁹¹				
LT195/75*14	DUAL	475	535	600(C) ⁹⁰	655	710(D) ⁹⁸		

LT215/75*14	SINGLE	520	590	650(C) ⁹³		720	775(D) ⁹⁹		
	DUAL	545	620	690(C) ⁹⁵					
LT195/75*15	SINGLE	600	680	750(C) ⁹⁶					
	DUAL	490	560	630(C) ⁹²					
LT205/75*15	SINGLE	540	615	690(C) ⁹⁵					
	DUAL	530	605	690(C) ⁹⁵					
LT215/75*15	SINGLE	585	665	750(C) ⁹⁸					
	DUAL	570	645	730(C) ⁹⁷		790	875(D) ¹⁰³		
LT235/75*15	SINGLE	625	710	800(C) ¹⁰⁰		870	950(D) ¹⁰⁶		
	DUAL	645	735	825(C) ¹⁰¹		900	975(D) ¹⁰⁷	1060	1150(E) ¹¹³
LT255/75*15	SINGLE	710	810	900(C) ¹⁰⁴		990	1060(D) ¹¹⁰	1160	1250(E) ¹¹⁶
	DUAL	735	835	925(C) ¹⁰⁵					
LT225/75*16	SINGLE	805	915	1030(C) ¹⁰⁹					
	DUAL	835	915	800(C) ¹⁰⁰		885	975(D) ¹⁰⁷	1040	1220(E) ¹¹²
LT245/75*16	SINGLE	700	795	880(C) ¹⁰³		970	1060(D) ¹¹⁰	1140	1215(E) ¹¹⁵
	DUAL	720	820	910(C) ¹⁰⁴		1000	1080(D) ¹¹¹	1170	1260(E) ¹¹⁶
LT265/75*16	SINGLE	790	900	1000(C) ¹⁰⁸		1100	1190(D) ¹¹⁴	1290	1380(E) ¹²⁰
	DUAL	810	920	1030(C) ¹⁰⁹		1130	1250(D) ¹¹⁶	1310	1400(E) ¹²⁰
LT285/75*16	SINGLE	890	1010	1120(C) ¹¹²		1240	1360(D) ¹¹⁹	1440	1550(E) ¹²³
	DUAL	910	1030	1150(C) ¹¹³		1260	1360(D) ¹¹⁹		
LT215/85*16	SINGLE	1000	1130	1250(C) ¹¹⁸		1380	1500(D) ¹²²		
	DUAL			85SERIES					
LT235/85*16	SINGLE	630	720	800(C) ¹⁰⁰		870	975(D) ¹⁰⁷	1030	1120(E) ¹¹²
	DUAL	695	790	880(C) ¹⁰³		965	1060(D) ¹¹⁰	1130	1215(E) ¹¹⁵
LT255/85*16	SINGLE	720	820	910(C) ¹⁰⁴		1000	1080(D) ¹¹¹	1170	1260(E) ¹¹⁶
	DUAL	790	900	1000(C) ¹⁰⁸		1100	1190(D) ¹¹⁴	1290	1380(E) ¹²⁰
LT255/85*16	SINGLE	815	930	1030(C) ¹⁰⁹		1130	1250(D) ¹¹⁶		
	DUAL	895	1020	1120(C) ¹¹²		1240	1360(D) ¹¹⁹		

*Tire size designation will include "R"(Radial ply), "B"(Bias belted) or "D"(Diagonal or bias ply).

NOTE 1: Letter in parentheses denote Load Range for which Bold Face Load are maximum. Number after Load Range parentheses are International Load Index number.

ALWAYS USE APPROVED TIRE AND RIM COMBINATION FOR DIAMETERS AND CONTOURS.

TABLE LTM-3C
CUSTOMARY UNIT

LIGHT TRUCK METRIC TIRES FOR TRUCKS, BUSES, TRAILERS
AND MULTIPURPOSE PASSENGER VEHICLES USED IN NORMAL HIGHWAY SERVICE
TIRE MOUNTED ON 5° DROP CENTER RIMS

LIGHT TRUCK

TIRE SIZE DESIGNATION	USAGE	TIRE LOAD LIMIT (LBS), AT VARIOUS COLD INFLATION PRESSURE (PSI)										
		RADIAL PLY		DIAGONAL PLY/BIAS BELTED								
		35	40	45	50	55	60	65	70	75	80	
		30	35	40	45	50	55	60	65	70	75	
60SERIES												
LT395/60R15	SINGLE	2095(C) ¹⁰⁶										
LT285/60R17	SINGLE	1820	1995	2170	2335(C) ¹¹⁰							
70SERIES												
LT215/70*14	DUAL	1125	1235	1340	1475(C) ⁹⁴							
	SINGLE	1235	1355	1470	1610(C) ⁹⁷							
LT245/70*15	DUAL	1420	1555	1695	1875(C) ¹⁰²							
	SINGLE	1560	1710	1860	2040(C) ¹⁰⁶							
LT255/70*15	DUAL	1505	1650	1795	1930(C) ¹⁰³							
	SINGLE	1655	1815	1970	2150(C) ¹⁰⁷							
LT265/70*15	DUAL	1595	1750	1900	2040(C) ¹⁰⁵							
	SINGLE	1750	1925	2090	2270(C) ¹⁰⁹							
LT285/70*15	DUAL	1780	1950	2120	2335(C) ¹¹⁰	2440	2595	2755(D) ¹¹⁶				
	SINGLE	1955	2145	2330	2535(C) ¹¹³	2680	2850	3000(D) ¹¹⁹				
LT315/70*15	DUAL	2150(C) ¹⁰⁷										
	SINGLE	2335(C) ¹¹⁰										
LT235/70*16	DUAL	1390	1525	1655	1820(C) ¹⁰¹							
	SINGLE	1525	1675	1820	1985(C) ¹⁰⁴							
LT255/70*16	DUAL	1565	1720	1865	1985(C) ¹⁰⁴	2150	2285	2470(D) ¹¹²				
	SINGLE	1720	1890	2050	2205(C) ¹⁰⁸	2360	2510	2680(D) ¹¹⁵				
LT275/70*16	DUAL	1750	1920	2090	2270(C) ¹⁰⁹	2400	2555	2755(D) ¹¹⁶				
	SINGLE	1925	2110	2295	2470(C) ¹¹²	2640	2805	3000(D) ¹¹⁹				
75SERIES												
LT175/75*14	DUAL	870	955	1135	1135(C) ⁸⁵							
	SINGLE	955	1050	1140	1235(C) ⁸⁸							
LT185/75*14	DUAL	945	1035	1130	1235(C) ⁸⁸							
	SINGLE	1040	1140	1240	1355(C) ⁹¹							
LT195/75*14	DUAL	1015	1115	1210	1325(C) ⁹⁰	1390	1480	1565(D) ⁹⁶				

LT215/75*14	SINGLE	1115	1225	1330	1435(C) ⁹³	1530	1625	1710(D) ⁹⁹											
	DUAL	1170	1285	1395	1520(C) ⁹⁵														
	SINGLE	1285	1410	1535	1655(C) ⁹⁸														
LT195/75*15	DUAL	1080	1165	1265	1390(C) ⁹²														
	SINGLE	1165	1280	1390	1520(C) ⁹⁵														
LT205/75*15	DUAL	1145	1255	1365	1520(C) ⁹⁵														
	SINGLE	1260	1380	1500	1655(C) ⁹⁸														
LT215/75*15	DUAL	1225	1340	1455	1610(C) ⁹⁷	1680	1785	1930(D) ¹⁰³											
	SINGLE	1345	1475	1600	176(C) ¹⁰⁰	1845	1960	2095(D) ¹⁰⁶											
LT235/75*15	DUAL	1390	1530	1660	1820(C) ¹⁰¹	1910	2030	2150(D) ¹⁰⁷	2265	2375	2535(E) ¹¹³								
	SINGLE	1530	1680	1825	1985(C) ¹⁰⁴	2100	2230	2335(D) ¹¹⁰	2490	2610	2755(E) ¹¹⁶								
LT255/75*15	DUAL	1575	1730	1870	2040(C) ¹⁰⁵														
	SINGLE	1730	1900	2065	2270(C) ¹⁰⁸														
LT225/75*16	DUAL	1365	1500	1630	1765(C) ¹⁰⁰	185	1995	2150(D) ¹⁰⁷	2220	2330	2470(E) ¹¹²								
	SINGLE	1500	1650	1790	1940(C) ¹⁰³	2080	2190	2335(D) ¹¹⁰	2440	2560	2680(E) ¹¹⁵								
LT245/75*16	DUAL	1545	1695	1845	2006(C) ¹⁰⁴	2125	2255	2381(D) ¹¹¹	2515	2640	2778(E) ¹¹⁸								
	SINGLE	1700	1865	2030	2205(C) ¹⁰⁸	2335	2480	2623(D) ¹¹⁴	2765	2900	3042(E) ¹²⁰								
LT265/75*16	DUAL	1740	1905	2075	2270(C) ¹⁰⁹	2385	2535	2755(D) ¹¹⁸	2825	2965	3085(E) ¹²⁰								
	SINGLE	1910	2095	2280	2470(C) ¹¹²	2620	2785	3000(D) ¹¹⁹	3105	3260	3415(E) ¹²³								
LT285/75*16	DUAL	1940	2130	2310	2535(C) ¹¹³	2660	2830	3000(D) ¹¹⁹											
	SINGLE	2130	2340	2540	2755(C) ¹¹⁶	2925	3110	3305(D) ¹²²											
85 SERIES																			
LT215/85*16	DUAL	1360	1490	1625	1765(C) ¹⁰⁰	1865	1985	2150(D) ¹⁰⁷	2210	2320	2470(E) ¹¹²								
	SINGLE	1495	1640	1785	1940(C) ¹⁰³	2050	2180	2335(D) ¹¹⁰	2430	2550	2680(E) ¹¹⁵								
LT235/85*16	DUAL	1545	1700	1845	2006(C) ¹⁰⁴	2125	2260	2381(D) ¹¹¹	2515	2645	2778(E) ¹¹⁸								
	SINGLE	1700	1870	2030	2205(C) ¹⁰⁸	2335	2485	2623(D) ¹¹⁴	2765	2905	3042(E) ¹²⁰								
LT255/85*16	DUAL	1745	1920	2085	2270(C) ¹⁰⁸	2400	2550	2755(D) ¹¹⁶											
	SINGLE	1920	2110	2290	2470(C) ¹¹²	2635	2800	3000(D) ¹¹⁹											

*Tire size designation will include "R"(Radial ply), "B"(Bias belted) or "D"(Diagonal or bias ply).

NOTE 1: Letter in parentheses denote load Range for which Bold Face Load are maximum. Number after Load Range parentheses are international Load index number.

-ALWAYS USE APPROVED TIRE AND RIM COMBINATION FOR DIAMETERS AND CONTOURS.

GENERAL DATA
TIRE MOUNTED ON 5 DROP CENTER RIMS

TIRE SIZE DESIGNATION	MEASURING RIM WIDTH	SECTION WIDTH	OVERALL DIAMETER		MAXIMUM GROWN TIRE OVERALL WIDTH	OVERALL DIAMETER		MINIMUM SIZE FACTOR	MINIMUM DUAL SPACING	MINIMUM FLAP WIDTH	TR TUBE VALVE
			HIGHWAY TREAD	TRACTIO N TREAD		HIGHWAY TREAD	TRACTIO N TREAD				

6.50-16LT	4.5	7.15	29.74	30.18	7.94	31.11	31.6	36.4	8.3	5.2	135
6.70-15LT	5	7.5	28.42	28.86	8.33	29.76	30.25	35.43			130CW
7.00-15LT	5.5	7.95	29.62	30.03	8.82	31.08	31.53	37.03		6.2	130CW
7.50-16LT	6	8.65	31.8	32.24	9.6	33.38	33.86	39.87	10	6.7	135

RADIAL PLY TIRES											
6.50R16LT	4.5	7.15	29.74	30.04	7.72	30.29	30.6	36.4	8.3	5.2	135
6.70R15LT	5	7.5	28.42	28.72	8.1	28.96	29.27	35.43			130CW
7.00R15LT	5.5	7.95	29.62	29.92	8.59	30.2	30.52	37.03		6.2	130CW
7.50-16LT	6	8.65	31.8	32.1	9.34	32.43	32.74	39.87	10	6.7	135

*Flap are required with tire sizes used on all rims with valve slot and are optional on rims with valve holes (When flaps are used ,radial ply tires require those designated for radial use.)
those designated for radial use.
NOTE 1: Tire size designation same as tire size designation .(When tubes are used ,radial ply tire require those designated for radial use.)
2:suggested flap size marking shall include rim diameter designation and flap width.Example 15-6.5LT ;.15=Rim diameter designation,
6.5=flap width, LT=For light truck usage

APPROVED RIM CONTOURS	
TIRE SIZE DESIGNATION	APPROVED RIM CONTOURS
DIAGONAL (BMS) PLY	RADIAL PLY
6.50-16LT	6.50R16LT 4.5K,4.50E,5K,6K,6L
6.70-15LT	6.70R15LT K,5.5K,5.50F,5.5J,6L
7.00-15LT	7.00R15LT 5K,5.5K,5.50F,5.5J,6L,6LB,6.5J
7.50-16LT	7.50-16LT 5.50F,6L,6K,6.5L,7L

NOTE:It is permissible to use existing JJ or JK rim contour where J are specified in the above table.

LIGHT TRUCK

GENERAL DATA
RADIAL PLY TIRES MOUNTED ON 5° DROP CENTER RIM SHOWN IN TABLES LTM-3M AND LTM-3C

millimeters (mm)
Inches (ins)

TIRE SIZE DESIGNATION	MEASURING RIM WIDTH	DESIGN NEW TIRES		MAXIMUM OVERALL WIDTH	GROWN TIRE		MINIMUM DUAL SPACING	MINIMUM SIZE FACTOR	MINIMUM FLAP WIDTH	TR TUBE VALVE	APPROVED RIM CONTOURS
		SECTION WIDTH	OVERALL DIA. HIGHWAY/TRAC.		OVERALL WIDTH	OVERALL DIA. HIGHWAY/TRAC.					
60SERIES											
LT325/60R15	9.5	331	771	77	351	787	793	384	1080	13	9J,9.5J,10J,11J
		3.03	30.35	30.59	13.82	30.98	31.22	15.12	42.52		
LT285/60R17	8.5	292	774		310	788			1047	13	8J,8.5J,9J
		11.5	30.47		12.2	31.02			41.22		
70SERIES											
LT215/70R14	6.5	221	658	664	234	670	676	256	863	13	5.5J,6J,6.5J,7J
		8.7	25.91	26.14	9.21	26.38	26.61	10.08	33.98		
LT245/70R15	7	248	725	731	263	739	745	288	955	13	6.5J,7J,7.5J
		9.76	28.54	28.78	10.35	29.09	29.33	11.34	37.6		
LT255/70R15	7.5	260	739	745	276	753	760	302	980	13	6.5J,7J,7.5J,8J
		10.25	29.09	29.33	10.87	29.65	29.92	11.89	8.58		
LT265/70R15	8	272	753	759	288	768	774	316	1006	13	7J,7.5J,8J,8.5J
		10.71	29.65	29.88	11.34	30.24	30.47	12.44	39.61		
LT285/70R15	8.5	292	781	787	310	797	803	339	1052	13	7.5J,8J,8.5J,9J
		11.5	30.75	30.98	12.2	31.38	31.61	13.35	41.42		
LT315/70R15	9.5	323	823	829	342	841	847	372	1123	13	8J,8.5J,9J,9.5J,10J
		12.72	32.4	32.64	13.46	33.11	33.35	14.76	44.21		
LT235/70R16	7	240	736	742	254	749	755	278	959	13	6J,6K,6L,6.5J,6.5K,6.5L,7J,7K,7KB,7L,7.5J
		9.45	28.98	29.21	10	29.49	29.72	10.94	37.76	13,15CW	
LT255/70R16	7.5	260	765	770	276	778	785	302	1005	13	6.5J,6.5K,6.5L,7J,7K,7KB,7L,7.5J,8J,8KB,8L,8LB
		10.24	30.08	30.31	10.07	30.63	30.91	11.89	39.57	13,15CW	
LT275/70R16	8	279	792	798	290	807	84	324	1051	13	7J,7K,7KB,7L,7.5J,8J,8KB,8L,8LB,8.5J
		10.98	31.18	31.42	11.63	31.77	32.05	12.76	41.38	8.7	
75SERIES											
LT175/75R14	5	177	618	624	188	628	635	205	782	13	4.5J,5J,5.5J
		6.97	24.33	24.57	7.4	24.72	25	8.07	30.79		

LT185/75R14	5	184	634	640	195	646	651	213	801	13	4.5J,5J,5.5J,6J
		7.24	24.96	25.2	7.68	25.63	8.39	31.65	829		
LT195/75R14	5.5	196	648	654	208	660	666	227	829	13	5J,5.5J,6J
		7.72	25.51	25.75	8.19	25.98	26.22	8.94	32.64		
		216	678	684	229	690	696	251	878		
LT215/75R14	6	8.5	26.93	26.93	9.02	27.17	27.41	9.88	34.57	13	5.5J,6J,6.5J,7J
		196	673	679	208	685	691	227	854		
LT195/75R15	5.5	7.72	26.5	26.73	8.19	27.2	8.94	33.62	877	13	5.5J,6J,6.5J
		203	689	695	215	701	707	235	903		
LT205/75R15	5.5	7.99	27.13	27.36	8.46	27.6	27.83	9.25	34.53	13	5.5J,6J,6.5J,7J
		216	703	709	229	715	723	251	903		
LT215/75R15	6	8.5	27.68	27.91	9.02	28.15	28.47	9.88	35.55	13	5.5J,6J,6.5J,7J
		235	733	739	249	745	753	273	950		
LT235/75R15	6.5	9.25	28.86	29.09	9.8	29.41	29.65	10.75	37.4	13	6J(K,Load Range E),6J,6.5J,7J
		255	763	769	270	779	785	296	999		
LT255/75R15	7	10.04	30.04	30.28	10.63	30.67	30.91	11.65	39.33	13	6J,6.5K,6.5L,7K,7L,6J,6.5J,7J
		223	744	750	236	758	764	259	950		
LT225/75R16	6	8.78	29.29	29.53	9.29	29.84	30.08	10.2	37.4	15CW	6K,6.5K,6.5L,7K,7L,6J,6.5J,7J
		248	774	780	263	788	795	288	1004		
LT245/75R16	7	9.76	30.47	30.71	10.35	31.02	31.3	11.34	39.53	15CW	7K,7L,8L,8J
		267	804	810	283	820	827	310	1051		
LT265/75R16	7.5	10.51	31.65	31.89	11.14	32.28	32.56	12.2	41.38	15CW	7K,7L,8L,8J
		286	834	840	303	852	857	332	1099		
LT285/75R16	8	11.26	32.83	33.07	11.93	33.54	33.74	13.07	43.27	15CW	8L,8LB,8KB,8J
85SERIES											
LT215/85R16	6	216	772	778	229	784	793	251	971	135	5.5K,5.5L,5.50F,6J,6K,6.5J,6.5L,7J,7K,7L
		8.5	30.39	30.63	9.02	30.95	31.22	9.88	38.23		
LT235/85R16	6.5	235	806	812	249	822	828	273	1022	135	6J,6K,6L,6.5J,6.5L,7J,7K,7L
		9.25	31.73	31.97	9.8	32.36	32.6	10.75	40.24		
LT255/85R16	7	255	840	846	270	858	864	296	1074	135	6.5J,6.5L,7K,7J,7K,7L,8J,8KB,8L,8LB
		10.04	33.07	33.31	10.63	33.78	34.02	11.65	42.28		

*Flap are required with tire sizes used on all rims with valve slot and are optional with valve holes. (When flaps are used, radial ply tires require those designated for radial use.)

NOTE 1: Tube size designation same as tire size designation (When tubes are used, radial ply tire require those designation for radial use.)
2: it is permissible to use existing JI or JK rim contour where J are specified in the above table.

DRAFT UGANDA STANDARD ON PUBLIC REVIEW