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Status of timber standardization in Kenya

By

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1.0 Introduction

Kenya Bureau of Standards is a national standardization body which develops standards and regulates the quality of various products in Kenya. The standards are developed through the assistance of Technical Committees in reference to international and national standards.
Validation of the standard specification is done when new developments arise.

There are various levels of standards which include company association (group standards), national and regional standards. The East African countries are in the process of harmonising the regional standards to facilitate uniform specification products and services.

Kenya Bureau of Standards (KEBS) was established by standards Act Chapter 496 of the Laws of Kenya. It started its operation in July 1974 as an integrated program for metrology, quality control and standardization. The main aim and objectives for the Bureau include:

- Preparation of standards relating to products, measurements, materials, process etc. and their promotion at national, regional and international levels.
- Certification of industrial products.
- Assistance in the production of quality goods
- Improvement of measurements accuracies.

2.0 Developing Kenyan Standards

The technical committees that formulate standards are constituted from experts representing various interests such as producers, consumers, technologists, research and testing organizations both in the private and public sectors. The committees develop standards through consensus of opinion. The Bureau acts as a Secretariat of the committees. After the standard has been developed by the Technical committee, it is passed over for public review where all interested parties give their comments and the relevant comments are incorporated in the standard.

2.1 Timber Technical Committees

There are three Technical committees which develop standards on Timber Products. These are:-

Timber and Timber products Technical committee: Standardization concerning structural applications of timber, wood -based panels, other wood based products, and related lignocellulosic fibrous materials including:

- requirements for design;
- structural properties, performance, and design values of materials, products, components, and assemblies and;
- test methods and requirements to establish related structural, mechanical and physical properties and performance.

Wood poles Technical committee: Standardization of round, sawn and processed timber, and timber materials in and for use in all applications, including terminology, specifications and test methods.

Plywood and boards Technical committee: Standardization in the field of wood-based panels such as fibreboards, particle boards and plywood, including terminology, classification, dimensions, test methods and quality requirements.

Revision of standards is done for validation. The revision does not necessarily mean an overhaul of the existing document but reconsideration of the same vis a vis any developments that may have taken place in the interim phase. The review may lead to confirmation or withdrawal of the standard.

3.0 Developed Standards in Timber Industry

The Kenya Bureau of Standards has published quite a number of standards on timber and reconstituted composite products. Most of these standards are based on woody plant fibres which are commonly found in the market

3.1 Standards of Plywood and boards Technical committee

KS 02-301:1983(Confirmed in 1999) –Specification for plywood for general purposes.
Covers the requirements of different grades and types of plywood with rotary-cut or sliced veneers used for general purposes

KS 02-302: 1983(Confirmed in 1999) –Specification for blockboards for general purposes.
Covers the requirements for blockboards for general purposes, manufactured from veneers and strips of wood

KS 02-446: 1984 Specification for wood cement slabs.
Specifies requirements for materials, density, dimensions and strength and other physical characteristics for wood wool cement slabs
KS 02-447: 1988 Specification for wood chipboards
Specifies requirements for materials types, sizes and finish of both medium and high density wood chipboard

KS 02-659: 1985 (Confirmed in 1999) Classification and Measurements of plywood panels and test pieces
Specifies classification of plywood panels and the procedures for measuring the thickness, length and width of the panels and their pieces
KS 02-1249: 1996 Specification for Fibreboard hardboard
Specifies requirements for fibre hardboard

KS 02-1246: 1996 Specification for soft boards for general purposes
Specifies requirements for soft boards for general purposes

KS 02-1247: 1996 Specification for veneer decorative plywood
Covers types of plywood with ornamental veneers on one or both faces used for decorative purposes

KS 1606: 2001 Specification for wood blocks for floors
Specifies the minimum requirements for dimensions, grade descriptions and methods of manufacture for hardwood and softwood blocks excluding end grain blocks for laying on level concrete or other types of rigid level bases
KS 2222:2010 Kenya Standard — Synthetic resin adhesives for plywood — Specification

KS 301:2:2010 Kenya Standard — Plywood — Specification Part 2: Marine plywood

KS 301:1:2010 Kenya Standard — Specification for plywood — Specification Part 1: Interior and exterior use
KS 301:3:2010 Kenya Standard — Plywood— Specification Part 3: shuttering work plywood
KS 2226:2010 Kenya Standard - Plywood — Methods of test

3.2 Standards of Timber and Timber Products Technical Committee

KS 02-17:1976 (Confirmed in 1999) –Specification for Sawn timber.
Standard specifies the maximum allowable defects in sawn timber for various end uses and apply to all hardwoods and softwoods grown in Kenya.

KS 02-19: 1976 (Confirmed in 1999) – Nomenclature of Commercial Kenya Timbers
Contains standard trade names for 164 timber species known to be marketed in Kenya including a few woody species used in pole form. Timbers imported from Uganda and Tanzania are included but not timbers from other parts of the world

KS 02-93:1984(Confirmed in 1999) **–Glossary of terms used in timber.**
Lists the terms used in timber industry

KS 02-448: 1984(Confirmed in 1999) Specification for Wood mosaic parquet panels
Specifies the requirements, for materials, dimensions and physical characteristics of wood parquet panel used for flooring

KS 02-94: 1985 (Confirmed in 1999) Specification for preservation of Timber
Specifies requirements for preservative treatment of timber. The preservatives, methods of application and suggested average retention levels have all been specified with the object of achieving long service life

KS 02-771: 1991(Confirmed in 1999) **– Specification for softwood timber grades for Structural use.**
Specifies one method of grading timber for structural use, namely visual stress grading but does not exclude the possibility of stress grading by approved techniques

KS 828: 2009 Kenya Standard — Structural use of timber Part 1: Code of practice for permissible stress design, materials and workmanship,

3.3 Standards of Wood poles Technical committee

KS 1608: 2001 Specification for wooden fence posts
Specifies the requirements for wooden fence posts and accompanying rails and guy rods for purposes of general use and also covers recommendations on their use under ordinary conditions

KS 1605: 2001 Specification for hardwood poles, droppers, laths, guardrail post and spacer blocks
Specifies general requirements for preservative treated wooden poles, droppers, laths, guardrail posts and spacer blocks, intended for the erection of fences and trellises, for agricultural and horticultural purposes, general use on orchards, general building purposes, use in contact with the ground and for the marine use

KS 1607: 2001 Specification for wooden packaging cases
Specifies the requirements of wooden packaging cases for general use for packaging of contents weighing not more than 250 Kg

KS 516: 2008 Wood poles for power and telecommunication lines - Specification
Specifies requirements for wood poles for power transmission, distribution and telecommunication overhead lines

3.4 Other Related Standards

KS 1804-1: 2003 Wood preservatives - Part 1: Determination of the effectiveness against Lyctus runneus (stephens) - Application by surface treatment (Laboratory method)

Specifies a method for determination of the protective effectiveness or the toxic values of a wood preservative against infestation by Lyctus brunneus (stephens) when the product is applied as a surface treatment to wood

KS 1804-2: 2003 Wood preservatives - Part 2: Determination of preventative action against recently hatched larvae of Hylotrupes bajulus (Linnaeus) (Laboratory method)

Specifies a method for the determination of the preventive action of a wood preservative against recently hatched larvae of Hylotrupes bajulus (Linnaeus) when the preservative is applied as a surface treatment to wood

KS 1804-3: 2003 Wood preservatives - Part 3: Determination of preventive effect on Reticulitermes santonensis-De Feytaud (Laboratory method)

Specifies a method for the determination of the effectiveness of a wood preservative against Reticulitermes santonensis de Feytaud when the preservative is applied as a surface treatment to wood

KS 1804-4: 2003 Wood preservatives - Part 4: Test method for determining the protective effectiveness against wood destroying basidiomycetes – Determination of the toxic values (Laboratory method)

Specifies a method for determining the toxic values of a wood preservative previously introduced into the wood by full impregnation against wood destoying basidiomycetes cultured on an agar medium

KS 1804-5: 2003 Wood preservatives - Part 5: Field test method for determining the relative protective effect of a wood preservative on wood in contact with the soil

Describes a field test method for determining the relative effectiveness of wood preservative that are applied by vacuum / pressure impregnation or other processes giving complete penetration in order to prevent degradation of timber in contact with soil by microorganisms

KS 1804-6: 2003 Wood preservatives - Part 6: Determination of the protective effectiveness against anobium punctatum (De Geer) by egg -laying and larval survival - Application by surface treatment (Laboratory method)

Specifies a method for the determination of the protective effectiveness or the toxic values of a wood preservative against infestation by Anobium punctatum (De Geer) when the product is applied as asurface treatment to wood

3.4 Adopted ISO Standards

KS ISO 8965: 1999 Logging industry - Technology - Terms
Defines terms relating to production operations in the logging industry

KS ISO 8966: 1987 Logging industry - Products - Terms and definitions
Defines terms for products of logging used in various fields

3.5 Draft Kenya Standards for timber and Related Products

KS 02-1247- Draft standard specification for veneers decorative plywood
KS 02-1249- Draft Kenya standard specification for fibre hardboards
KS 02-1010 - Draft Kenya standard code of practice for laying parquet and wood block floors.
KS 02-1011 - Draft Kenya standard code of practice for seasoning timber.
KS 2236 - Determination of Moisture content of timber (electric moisture meter method)

4.0 Harmonization of the East African Standards

The East African countries consisting of Kenya, Uganda, Tanzania, Rwanda and Burundi are in the process of harmonising regional standardization activities after reviving the East African Corporation. In addition to that the African region organisation for standardization ARSO which was established in 1977 aims at promoting standardization at national level

EAS 23:2000, Dimensions for sawn timber planed timber - Specification
EAS 24:2000, Timber industry - Glossary of terms
EAS 272:2007, Timber - Determination of moisture content for physical and mechanical tests
EAS 273:2002, Timber - Sampling methods and general requirements for physical and mechanical tests
EAS 274:2002, Timber - Determination of average moisture content of a lot
EAS 275:2002, Timber - Determination of volumetric shrinkage
EAS 275:2002, Timber - Determination of volumetric shrinkage
EAS 276:2007, Timber - Determination of volumetric swelling
EAS 277:2002, Timber - Determination of radial and tangential shrinkage
EAS 278:2002, Timber - Determination of radial and tangential swelling
EAS 279:2002, Timber - Determination of ultimate stress in compression
EAS 280:2002, Timber - Determination of ultimate tensile stress parallel to grain
EAS 281:2002, Timber - Determination of ultimate tensile stress perpendicular to grain
EAS 325:2002, Wood preservatives and treated timber - Guide to sampling and preparation of wood preservatives and treated timber
EAS 324:2002, Copper/Chromium Arsenic composition for the preservation of timber - Method of timber Treatment
EAS 325:2002, Wood preservatives and treated timber - Guide to sampling and preparation of wood preservatives and treated timber

5.0 The Challenges in Standardization of timber products.

- Keeping pace with new developments
- Unsustainable utilization of forest produce has led to unavailability of enough forest products to necessitate standardization
- Importations of products from different regions using different standards is going on resulting to difficulty in harmonization of the same to meet the requirements of Kenya
- Development of national standard is a slow process as it involves various interested parties and poor attendance of the Technical Committees
- Most of the Kenyan indigenous timber species have very good properties for particular products but cannot be recommended for use because the government has put a ban on harvesting of natural forests.
- Adoption of standards in timber products from other countries is not easy as in other products as some wood properties are dependent on the growing environment e.g. climate.

6.0 Developments

- The Government of Kenya is encouraging the planting of more trees through on-farm tree planting and KEFRI is working on the best on-farm tree processing methods to enhance its efficient use.
- Kenya Forestry Research Institute and Ministry of Public works are promoting the efficient use of plantation grown species through conducting training courses on Specification for softwood timber grades for Structural use.
- Ministry of Public works is promoting the use of Trussed Rafter in the construction industry which help timber used for trusses by about 50 percent