
 <p>AFC Forestry Commission TIMBER INDUSTRY DEVELOPMENT DIVISION</p>	DOCUMENT TITLE Work Instructions For Square-Edged Sawn Timber Inspection and Grading	
DOCUMENT No.	TIDD-GI-WI.02-03	PAGE 1 OF 10


TABLE OF CONTENT	PAGE
1.0 PURPOSE	3
2.0 SCOPE	3
3.0 RESPONSIBILITY	3
4.0 INSTRUCTIONS	4
5.0 REFERENCES	8
6.0 REVISION STATUS	9
7.0 ANNEX 1	10

CIRCULATION



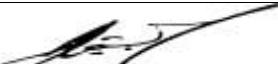
This work instruction is issued on controlled basis to:


S/NO.	DESIGNATION	COPY NUMBER
1	Chief Executive (Forestry Commission)	01
2	Executive Director	02
3	Director, Operations	03
4	Manager, Grading and Inspection	04
5	Manager, Trade & Industry Development	05
6	Manager, Contracts & Permits	06
7	Manager, Finance	07
8	Manager, Human Resource & Administration	08
9	Management Representative (MR)	09

Written by:	Name: Anthony Amamoo Eshun	Signature: 	Date: 15/02/2019
Reviewed by:	Name: Dr, Mohammed Nurudeen Iddrisu	Signature: 	Date: 18/02/2019
Approved by: Executive Director	Name: Dr. Ben Nathan Donkor	Signature: 	Date: 19/02/2019

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DOCUMENT No.	TIDD-GI-WI.02-03	PAGE 2 OF 10

10	Area Manager, Sunyani	10
11	Area Manager, Kumasi	11
12	Area Manager, Takoradi	12
13	Area Manager, Tema	13
14	Area Manager, Final Inspection, Takoradi	14
15	Area Manager, Jasikan	15
16	Area Manager, Akim Oda	16
17	Area Manager, Techiman	17
18	Area Manager, Sefwi Awaso	18
19	Area Manager, Samreboi	19
20	Area Manager, Bolgatanga	20
21	Area Manager, Assin Fosu	21
22	Area Manager, Accra	22
23	First Deputy Management Representative	23
24	Second Deputy Management Representative	24

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DOCUMENT No.	TIDD-GI-WI.02-03	PAGE 3 OF 10

1.0 PURPOSE

The purpose of these Work Instructions is to provide quantity and quality assurance for square-edged sawn timber (lumber).

2.0 SCOPE

The Scope of application of this document is GI work instructions for inspection, measurement, volume calculation and grading of square-edged sawn timber for quantity and quality assurance.

3.0 RESPONSIBILITY



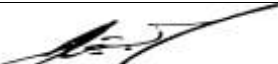
Executive Director (ED) is responsible for setting out criteria for work instructions for quantity and quality assurance of square-edged sawn timber.


Director, Operations (DO) is responsible for facilitating development of work instructions for square-edged sawn timber inspection and ensure its application.

Manager, Grading and Inspection (MGI) is responsible for development of work instructions for square-edged sawn timber and supervising its application.

Area Manager (AM) is responsible for supervising field implementation of work instructions for square-edged sawn timber.



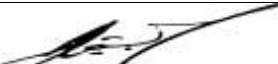
Inspector of Timber (IT) is responsible for field application of work instructions for square-edged sawn timber.


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DOCUMENT No.	TIDD-GI-WI.02-03	PAGE 4 OF 10



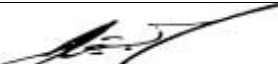
4.0 INSTRUCTIONS


Clause No	Task	Responsibility	Related Documents
4.1	<p>TOOLS REQUIRED</p> <p>Steel tape</p> <p>Moisture meter</p> <p>Magnifying glass</p> <p>Electronic calculator</p> <p>Crayon</p>	MGI/AM	
4.1.1	<p>Generally, verify product against documents as follows:</p> <p>i) contract of sale, if any</p> <p>ii) Ensure Contract Number tallies with that on Specifications sheet</p> <p>iii) Check Contract expiry date to ensure that the contract has not expired</p> <p>iv) Ensure Contract species, destination, product and type of drying tally with packing list</p> <p>v) Where product is break-bulk, examine bundles/pallets to ensure they are firmly strapped</p> <p>vi) Check to ensure bundles are labelled/ tagged as follows:</p> <p>a) Contract No.</p> <p>b) Species</p> <p>c) Bundle No.</p> <p>d) No. of pieces</p> <p>e) Destination</p> <p>f) Country of origin</p> <p>g) Shipping Mark of the Exporter</p>	IT	Contract of sale, Factory Specifications sheet
4.1.2	Ensure ends are painted in the prescribed colours (where end painting is a requirement in the contract of sale)	IT	Contract of Sale

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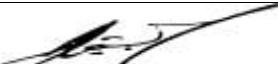
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DOCUMENT No.	TIDD-GI-WI.02-03	PAGE 5 OF 10


4.1.3	For consignments with only one thickness, randomly select at least 10% of the volume of the consignment and inspect and write findings in inspectors' field notebook.	IT	TIDD-GI-FM.16-01
4.1.4	For consignment(s) with more than one thickness, purposively select sample to ensure that all thickness classes are fairly represented.(See Annex 1)Thereafter, randomly select at least 10% of the volume of each thickness class of the consignment and inspect and write findings in inspectors' field notebook.	IT	TIDD-GI-FM.16-01
4.2	<p>How to identify timber species</p> <p>Identify timber species as per <i>Species Identification Manual</i>, and reconcile with Specification sheet</p>	IT	EXT.TIDD-GI-MN.05
4.3	<p>How to verify moisture content</p> <p>Randomly verify <i>moisture content (MC)</i> with moisture meter at three evenly spaced points across the grain of a piece of lumber and reconcile with documents. Moisture content is expressed in percentage (%).</p> <p><i>NB: Knot positions shall be avoided</i></p>	IT	EXT.TIDD-GI-STD-01
4.4.1	<p>How to Measure thickness</p> <p>Measure thickness in millimeters (mm) with steel tape at the two ends and the middle of a piece of lumber and record the minimum value.</p>	IT	EXT.TIDD-GI-STD-01
4.4.2	<p>How to measure width</p> <p>Measure width in millimeters (mm) with steel tape at the two ends and the middle of a piece of lumber and record the minimum value.</p> <p><i>NB: In random widths, measure all pieces in a bundle</i></p>	IT	EXT.TIDD-GI-STD-01
4.4.3	<p>How to measure length</p> <p>Measure <i>length</i> in meters (m) along the grain at two opposite sides of a piece of lumber and record minimum value to the last whole 5cm.</p>	IT	EXT.TIDD-GI-STD-01
4.5	<p>How to Calculate Volume (m³)</p>	IT	EXT.TIDD-GI-STD-01
4.5.1	<p>Volume of a Plank (fixed width)</p> <p>$V(m^3) = \frac{T \times W \times L}{1000\ 000} \times \text{no of pieces}$</p> <p>-</p>		

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DOCUMENT No.	TIDD-GI-WI.02-03	PAGE 6 OF 10


	<p>Where:</p> <p>V = Volume (m³)</p> <p>T = Thickness (mm)</p> <p>W = width (mm)</p> <p>L = Length (m)</p>		<p>TIDD-GI-F.14-02</p> <p>Contract of sale</p> <p>Factory</p> <p>Specification</p> <p>sheet</p>
4.5.2	<p>Volume of Bundle (Random widths)</p> <p>$V (m^3) = \frac{T \times W \times L}{1000\ 000}$</p> <p>Where:</p> <p>V = Volume (m³)</p> <p>T = Thickness (mm)</p> <p>W = Total width of planks in the bundle (mm)</p> <p>L = Length (M).</p> <p><i>NB: Stepped lengths shall be measured as presented.</i></p>	IT	<p>EXT.TIDD-GI-STD-01</p> <p>TIDD-GI-F.14-02</p> <p>Contract of sale</p> <p>Specification</p> <p>Sheet</p>
4.5.3	<p>Volume of Bundle (Fixed width)</p> <p>Volume of Bundle = $\frac{T \times W \times L}{1000\ 000} \times \text{No. of Pieces}$</p> <p>Where:</p> <p>V = Volume (m³)</p> <p>T = Thickness (mm)</p> <p>W = Width (mm)</p> <p>L = Length (m)</p>	IT	<p>EXT.TIDD-GI-STD-01</p> <p>TIDD-GI-F.14-02</p> <p>Contract of sale</p> <p>Specification</p> <p>Sheet</p>
4.5.4	<p>Volume of consignment</p> <p>Sum up volume of bundles to obtain total volume of consignment (m³)</p>	IT	<p>EXT.TIDD-GI-STD-01</p> <p>TIDD-GI-F.14-02</p> <p>Contract of sale</p> <p>Specification</p> <p>Sheet</p>
4.6	<p>How to Grade square-edged sawn timber</p> <p>Grade and verify quality against Grading standard (GS) as follows:</p>	IT	<p>EXT.TIDD-GI-STD-01</p>
4.6.1	<p>Grading for General Purpose Market,</p> <p>i Inspect both faces of each plank for defects</p>	IT	<p>EXT.TIDD-GI-STD-01</p>

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DOCUMENT No.	TIDD-GI-WI.02-03	PAGE 7 OF 10

ii	Note and select the worse looking face	IT	EXT.TIDD-GI-STD-01
4.6.2	Grading for Special Purpose Market,	IT	EXT.TIDD-GI-STD-01
i	Inspect both faces of each plank for defects		
ii	Note and select the better looking face.		EXT.TIDD-GI-STD-01
4.7	Identify defects observed in 4.6.1 or 4.6.2 and determine extent of each defect (size, number, proximity, size in relation to unit/surface area, length, width etc.) as prescribed by GS.	IT	EXT.TIDD-GI-STD-01
4.7.1	Relate defects to surface area of plank.	IT	EXT.TIDD-GI-STD-01
4.7.2	Determine Standard Defect that best fits each collection of defects identified on the surface.	IT	EXT.TIDD-GI-STD-01 TIDD-GI-F.20-01
4.7.3	Determine the Standard Defects limit for the various grades and grade plank against GS	IT	EXT.TIDD-GI-STD-01
4.8	Repeat 4.1 – 4.7.3 for other samples as required	IT	EXT.TIDD-GI-STD-01
4.9	Construct a table of Standard Defects of all the planks sampled and determine quality (grade) of bundle as arising from the table.	IT	EXT.TIDD-GI-STD-01
4.10	Unless otherwise specified, ensure air dry product is stacked with 12mm stickers of the same timber species and are evenly spaced. <i>NB: Kiln dry bundles shall not be stacked on stickers</i>	IT	EXT.TIDD-GI-STD-01
4.11	Fill processed timber inspection form.	IT	TIDD-GI-F.14-02
4.12	Analyse and validate Consignment input and output statement and endorse by signing.	IT	TIDD-GI-WI.01-02 TIDD-GI-F.13-02
4.13	Write lumber inspection certificate in quadruplicate when satisfied with results and submit to Area Manager/Assignee for approval and issue to client.	IT	TIDD-GI-F.17-02



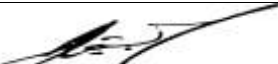
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DOCUMENT No.	TIDD-GI-WI.02-03	PAGE 8 OF 10

4.14	Supervise stuffing of lumber into container, while noting bundle numbers loaded.	IT	TIDD-GI-F.14-02
4.15	Reconcile quantity of lumber stuffed in the container with the lumber inspection certificates and the specification sheets.	IT	TIDD-GI-F.17-02 Specification sheets
4.16	Observe sealing of the container by staff of Ghana Revenue Authority (Customs Division) to ensure no foreign material is included, where applicable.	IT	
4.17	Ensure the wood product is fumigated as contract of sale may require.	IT	Contract of Sale

5.0 REFERENCES:



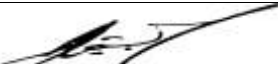
TIDD-GI-P.14-02 Procedure For Inspection and Grading of Timber Products for Export
TIDD-GI-WI.01-02 Work Instruction for Consignment Input and Output Statement
TIDD-GI-F.13-02 Consignment Input and Output Statement
TIDD-GI-F.20-02 Square-Edged Sawn Timber Inspection checklist
TIDD-GI-F.14-02 Processed Timber Inspection Form
TIDD-GI-F.17-02 Lumber Inspection Certificate
TIDD-GI-F.18-02 Inspection request form
TIDD-GI-F.19-02 Inspection Appointment form
TIDD-GI-FM.16-01 Inspectors Field Notebook for Lumber
EXT.TIDD-GI-STD-01 Specification and grading rules for square-edged sawn timber (GS 1029:2017)
EXT.TIDD-GI-MN.05 The Tropical Timbers of Ghana


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DOCUMENT No.	TIDD-GI-WI.02-03	PAGE 9 OF 10

6.0 REVISION STATUS

STATUS	DATE OF REVISION	DOCUMENT CHANGE (S)
02	October 23, 2017	Change of document number
03	February 15, 2018	<ol style="list-style-type: none"> 1. Clause 4.1.3 amended to reflect actual work being done:” For consignment(s) with one thickness... 2. Clause 4.1.4. Insertion of clause 4.1.4. 3. Clause 4.13 amended to ensure that a higher authority/his representative approve inspection certificate. “...submit to Area Manager/his representative for approval...”

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DOCUMENT No.	TIDD-GI-WI.02-03	PAGE 10 OF 10

ANNEX 1

Square Edged-Sawn Timber consignments often consist of more than one thickness. Different thicknesses affect the moisture content and the drying defects of the wood. A purposive sample is to ensure that the different characteristics of the thicknesses (i.e., moisture content and drying defects) are fairly represented in the sample taken. However, at least 10% random sample of the volume are taken from each thickness class for inspection.

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