SSFI TECHNICAL BULLETIN

Guide to Planks and Platforms

Introduction

Many types of planks and platforms, manufactured from numerous different materials, are used in construction and maintenance. Different types of planks and platforms have different capabilities and intended uses, and it is important that users and specifiers understand the differences among the various available products.

To assist in this regard, the Plank-Platform Section of the Scaffolding, Shoring, & Forming Institute (SSFI) has developed this guide to planks and platforms. For further information about requirements related to planks and platforms, consult the following standards and codes:

- OSHA 29CFR1926.451, Subpart L
- ANSI A10.8, American National Standard for Construction and Demolition Operations-Scaffolds
- ANSI/SSFI S100, Standards for Testing and Rating Scaffold Components and Assemblies
- ANSI/UL 1322
- CAN/CSA – S269.2, Access Scaffold for Construction Purposes
- PS 20, American Softwood Lumber Standards
- CAN/CSA – S269.2, Access Scaffold for Construction Purposes

Definitions

Metal plank - Manufactured scaffold platform unit up to 12” wide and made from a ductile material such as steel or aluminum alloy.

Surface - Top horizontal plane on which workers walk or stand.

End cap - An enclosure with or without hooks that is fastened to each end of a plank.

Edge - Vertical longitudinal surface of a plank.

Hooks - Devices attached to a plank to support the plank on a bearer or ledger.

Wind latch - Device intended to prevent uplift.

Span - Length of plank as measured from center of support bearer or ledger to center of support bearer or ledger.

This Technical Bulletin was prepared by members of the SSFI Plank-Platform Section.

Edge Laminated Plank – A plank made from two or more members (either sawn lumber, finger jointed lumber and/or structural composite lumber) where the members are bonded with an exterior grade adhesive. The primary bond is along the least dimension of each member.

Face Laminated Plank -- A plank made from two or more members (either sawn lumber, finger jointed lumber and/or structural composite lumber) where the members are bonded with an exterior grade adhesive. The primary bond is along the largest dimension of each member.

Pinned Plank – A plank made of two or more members (sawn lumber, finger-jointed lumber and/or structural composite lumber) where the members are mechanically fastened together.

Structural Composite Lumber (SCL) – products where discrete elements are bonded together with an exterior grade adhesive. Laminated Veneer Lumber (LVL) is most common SCL used for scaffold plank. Other SCL products include:

Laminated Strand Lumber (LSL)
Oriented Strand Lumber (OSL)
Parallel Strand Lumber (PSL)

Solid Sawn Lumber – a product of a sawmill and planing mill usually not further manufactured other than by sawing, resawing, passing lengthwise through a standard planing machine, crosscutting to length, and matching. Solid sawn lumber is stress graded either visually or mechanically. All solid sawn wood planks must be rated as "scaffold plank" and shall be certified by, or bear the grade stamp of a grading agency approved by the American Lumber Standards Committee.

Visual Evaluation – identification and appraisal of lumber growth (i.e. knots, slope of grain, splits) and manufacturing characteristics by visual means as a part of lumber segregation.

Visually Graded Lumber – lumber graded by visual evaluation in accordance with grading rules of the applicable grading or inspection agency. Stress grades are established on the basis of features that relate to mechanical properties. Stress grades designate near-minimum strength properties and near-average stiffness properties. An example of a visually graded product is the Southern Yellow Pine Dense Industrial 65 (DI65).

Mechanical Evaluation – identification and appraisal of one or more physical or mechanical lumber characteristics as a part of the lumber segregation process. A common machine used in this process is a continuous lumber tester.

Mechanically Graded Lumber – solid sawn lumber graded by mechanical evaluation. Visual evaluation may also be required. The material has assigned design properties and is manufactured for use as structural members. Mechanical grades, as defined by the American Lumber Standards Committee Standard Voluntary Product Standard PS 20 *"American Softwood Lumber Standard"* are Machine Stress Rated (MSR) Lumber and Mechanically Evaluated Lumber (MEL).

Cross rung – A structural support member of a fabricated platform that is located between and fastened to the platform siderails.

Rated Working Load – The maximum static load that may be imposed on a fabricated platform, including the weight of workers, equipment and materials but excluding the weight of the platform.

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Scaffold Tower – A temporary elevated platform used for supporting workers or materials or both.

Siderail – The main longitudinal structural support member of a fabricated platform.

Stirrup – A device that connects a hoist mechanism to a suspended platform and transfers the platform load to the hoist mechanism.

Suspended Scaffold – One or more platforms suspended by non-rigid means from an overhead structure.

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Outline

Working / walking surfaces and components of working / walking surfaces in scaffold applications are generally grouped according to the following outline:

Platform Units

1.0 Planks

1.1 Metal Planks

1.1.1 Metal Plank Types
1.1.2 Metal Plank Terms
1.1.3 Load Rating of Metal Planks
1.1.4 Uses of Metal Planks

1.2 Solid Sawn and Engineered Wood Planks

1.2.1 Wood Plank Types
1.2.2 Wood Plank Terms
1.2.3 Third Party Requirements
1.2.4 Plank Identification
1.2.5 Load Rating of Wood Planks
1.2.6 Use of Wood Planks

2.0 Decks

2.1 Aluminum Frame
2.2 Steel Frame
2.3 Aluminum Extruded

3.0 Fabricated Platforms

3.1 General
3.2 Types of Fabricated Platforms

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1.0 Planks

1.1 Metal Planks

1.1.1 Metal Plank Types


Metal Plank without hooks


Metal plank with hooks

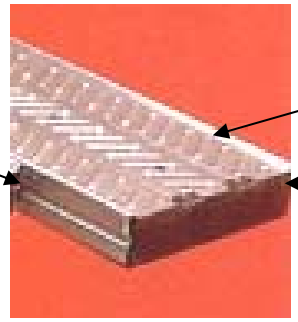

Metal plank with hooks

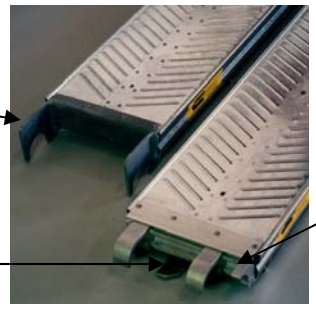

Metal plank with hooks


Metal plank with support pin holes


Metal plank with ledger channel hooks

1.1.2 Metal Plank Terms





1.1.3 Load Rating of Metal Planks

Metal planks are rated for a concentrated load (in pounds) or a uniform load (in pounds per foot) by the manufacturer.

Planks shall support a minimum concentrated load of 250 pounds (113kg) applied at the midpoint of the span.

1.1.4 Uses of Metal Planks

Metal plank are used as temporary work platforms on supported scaffolds. The surface may be solid, perforated or an open slot type. The plank may have end hooks which are supported by bearers when used on fixed length bays. Or they may have end caps and are used by lapping the ends over bearers similar to wood plank. Maximum span is typically 10 feet.

1.2 Solid Sawn And Engineered Wood Planks

1.2.1 Wood Plank Types

Laminated Veneer Lumber (LVL)

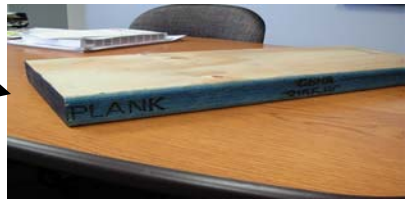
Solid Sawn Lumber

Edge Laminated Plank

Pinned Plank

1.2.2 Wood Plank Terms

LVL Edge Embossing Example



Solid Sawn Grade Stamp Example

Third-Party Stamp Example

1.2.3 Third-Party Requirements

Engineered Wood Products -- All engineered wood products used as scaffold plank shall have the logo of an independent third party agency embossed or stamped on the face or the edge of the plank. A third-party access to the facility and personnel to verify production and testing parameters, has procedures to follow for inspection and testing, has no financial interest in or is dependent upon any single company manufacturing the product being tested, and is not owned by a company manufacturing engineered wood products.

Solid-Sawn Lumber--All solid-sawn lumber planks shall have a grade stamp from a nationally accredited lumber grading agency. The grade stamp shall indicate that it is a scaffold plank grade. Examples of grading agencies are:

SPIB – Southern Pine Inspection Bureau
WWPA – Western Wood Products Association
WCLIB – West Coast Lumber Inspection Bureau

1.2.4 Plank Identification

Embossing – a means to identify engineered wood planks where lettering is indented in the plank edge. Information contained in the embossing includes:

- **Date of Manufacture/Proof Testing**
- **Plank Manufacturer/Plank Trade Name** – useful in associating the proper product literature.
- **Plank Grade** – With engineered wood products, this is associated with the stiffness of the planks (i.e. 2.15 or 2.2).
- **Proof Loaded/Proof Tested** – an indication that each plank has been non-destructively evaluated in bending prior to final product shipment.
- **Third-Party Logo or Name**

1.2.5 Load Rating of Wood Planks

Wood and engineered wood planks are designed with concentrated loads (pounds) and uniform loads (pounds/square foot).

1.2.6 Uses of Wood Plank

Wood and Engineered wood product planks are used as temporary platforms on supported scaffolds. Surfaces are solid and may not have opaque finishes or coatings. Planks are used by lapping ends over bearers. Maximum span for a one-person load is typically 10 feet.

2.0 Decks

Decks are fabricated temporary work surfaces commonly 12" (305mm) to 32 inches wide, 2 feet to 14 feet long and rated by the manufacturer in pounds per square foot or Newtons per square meter. They can be manufactured from a variety of materials but the most common are the aluminum framed and steel framed with solid-type, slat-type, or open-mesh decking, such as plywood, aluminum, or expanded metal that is fastened to side rails or cross rungs. The maximum clearance between the decking and side rail and between slats cannot exceed 1 inch. The decks are equipped with hooks on each end that allow the deck to rest on a bearer and are offset to allow a continuous run of decking. If metal is used as the walking plane, it must incorporate a slip resistant surface.

2.1 Aluminum Frame
- Plywood Surface
- Aluminum Surface

2.2 Steel Frame
- Expanded Metal Surface
- Plywood Surface

2.3 Aluminum Extruded

3.0 Fabricated Platforms

3.1 General - A fabricated platform is a temporary work surface used for supporting one, two or three workers and equipment. The decking of the fabricated platform may be solid type, slat type or open mesh, and shall be fastened to the siderails or cross rungs. If metal decking is used, it must incorporate a slip resistant surface. Fabricated platforms may be used with a scaffold tower or with stirrups as part of a suspended scaffold. Fabricated platforms are also referred to as stages, stage platforms, decorator plank and picks.

3.2 Types of Fabricated Platforms

One-person fabricated platform – A platform with a rated working load of 250 lbs (113 kg) placed in the center of the span. The maximum length of a one-person fabricated platform is 24 ft. (7.3 m), with a minimum width of 12” (305 mm) and a maximum width of 20” (508 mm).

Two-person fabricated platform – A platform with a rated working load of 500 lbs (227 kg): 250 lbs (113 kg) placed 9” (229 mm) to the left of the centerline of the span and 250 lbs (113 kg) placed 9” (229 mm) to the right of the centerline of the span. The maximum length of a two-person fabricated platform is 40 ft. (12.2 m), with a minimum width of 12” (305 mm) and a maximum width of 30” (762 mm). (Note: the minimum width increases to 20” (508 mm) when the platform length exceeds 32 ft. (9.8 m))

Three-person fabricated platform – A platform with a rated working load of 750 lbs: 250 lbs (113 kg) placed 18” (457 mm) to the left of the centerline of the span, 250 lbs (113 kg) placed at the centerline of the span and 250 lbs (113 kg) placed 18” (457 mm) to the right of the centerline of the span. The maximum length of a three-person fabricated platform is 40 ft. (12.2 m), with a minimum width of 20” (508 mm) and a maximum width of 36” (914 mm).

Aluminum Frame Stage – A fabricated platform constructed of aluminum siderails, aluminum cross rungs and non-slip aluminum decking. Available in one-person, two-person and three-person load ratings.

Extendable Fabricated Platform – A fabricated platform of the slat type whose length can be varied by sliding one end in or out with respect to the other end. The load rating is limited to one-person.

Modular Platform – A fabricated platform made up of two or more platform segments that are fastened together to form a single platform capable of supporting two or three workers and equipment.