

UL Product iQ®

BXUV.L521 - Fire-resistance Ratings - ANSI/UL 263

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, systems, devices, and materials.
Authorities Having Jurisdiction should be consulted before construction.
Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements.
When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design.
Only products which bear UL's Mark are considered Certified.

Fire-resistance Ratings - ANSI/UL 263

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

See General Information for Fire-Resistance Ratings - ANSI/UL 263 Certified for United States Design Criteria and Allowable Variances
See General Information for Fire-Resistance Ratings - CAN/ULC-S101 Certified for Canada Design Criteria and Allowable Variances

Design No. L521

February 14, 2022

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Alternate Floor Mat Materials - (Optional) - Floor mat material 1/4 in. (6 mm) thick adhered to subfloor with Hacker Floor Primer. Primer to be applied to the surface of the mat prior to the placement of the metal lath. When metal lath is used, floor topping thickness a nom 1-1/4 in. over the floor mat.

HACKER INDUSTRIES INC - Type Hacker Sound-Mat II

Metal Lath (Optional) - For use with 3/8 in. (10 mm) floor mat materials, 3/8 in. expanded steel diamond mesh, 3.4 lbs/sq yd placed over the floor mat material. Hacker Floor Primer to be applied prior to the placement of the metal lath. When metal lath is used, floor topping thickness a nom 1-1/4 in. over the floor mat.

Finish Flooring - Floor Topping Mixture - Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1100 psi. Mixture shall consist of 6.8 gal of water to 80 lbs of floor topping mixture to 1.9 cu ft of sand. Refer to the manufacturer's instructions accompanying the material and/or contact the manufacturer's technical support for specific mix design and minimum thickness recommended for use with eligible floor mats.

HACKER INDUSTRIES INC - Firm-Fill Gypsum Concrete, Firm-Fill High Strength, Gyp-Span Radiant

Trusses - Parallel chord trusses, spaced a max of 24 in. OC, fabricated from nom 2 by 4 lumber, with lumber oriented vertically or horizontally. Min truss depth is 12 in. when no Ceiling Damper* is used and 18 in. when a Ceiling Damper* is used. Truss members secured together with min 0.0356 in. thick galv steel plates. Plates have 5/16 in. long teeth projecting perpendicular to the plane of the plate. The teeth are in pairs facing each other (made by the same punch), forming a split tooth type plate. Each tooth has a chisel point on its outside edge. These points are diagonally opposite each other for each pair. The top half of each tooth has a twist for stiffness. The pairs are repeated on approx. 7/8 in. centers with four rows of teeth per inch of plate width.

Air Duct* - Any UL Class 0 or Class 1 flexible air duct installed in accordance with the instructions provided by the damper manufacturer.

Ceiling Damper* - For use with min 18 in. deep trusses. Max nom area shall be 324 sq in. with the length not to exceed 24 in. and the width not to exceed 20 in. Max height of damper shall be 14 in. Aggregate damper openings shall not exceed 162 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturer's installation instructions provided with the damper. A steel grille (Item 9) shall be installed in accordance with installation instructions.

C&S AIR PRODUCTS - Model RD-521-RT

POTTORFF - Model CFD-521

4A. Alternate Ceiling Damper* - For use with min 18 in. deep trusses. Max nom area shall be 196 sq in. with the length not to exceed 26 in. and the width not to exceed 14 in. Max height of damper shall be 7 in. Aggregate damper openings shall not exceed 98 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturer's installation instructions provided with the damper. A steel grille (Item 9) not to exceed 144 in² shall be installed in accordance with installation instructions.

C&S AIR PRODUCTS - Model RD-521-RT

POTTORFF - Model CFD-521-BT

4B. Alternate Ceiling Damper* - For use with min 18 in. deep trusses. Max nom area shall be 256 sq in. with the length not to exceed 24 in. and the width not to exceed 20 in. Max height of damper shall be 17 in. Aggregate damper openings shall not exceed 128 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturer's installation instructions provided with the damper. A steel grille (Item 9) shall be installed in accordance with installation instructions.

C&S AIR PRODUCTS - Models RD-521-IP, RD-521-NP

POTTORFF - Models CFD-521-IP, CFD-521-NP

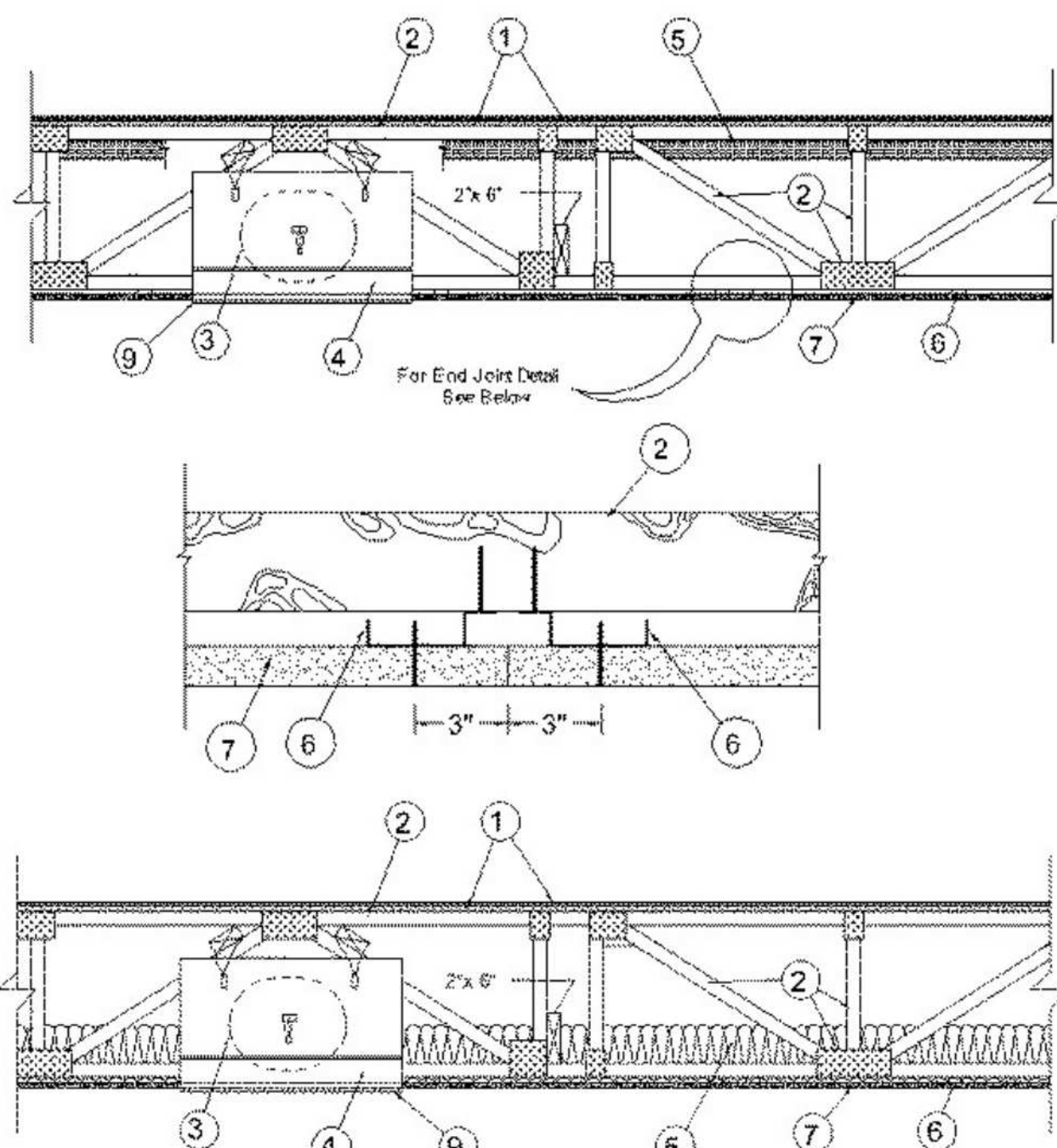
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Alternate Insulation Placement

- 1. Flooring System - The flooring system shall consist of one of the following:
System No. 1: Floor mat material loose laid over the subfloor.
System No. 2: Floor mat material loose laid over the subfloor with a vapor barrier.
System No. 3: Floor mat material loose laid over the subfloor with a vapor barrier and finish flooring.

- Vapor Barrier - (Optional) - Nom 0.030 in. thick commercial asphalt saturated felt.
Finish Flooring - Floor Topping Mixture - Min 3/4 in. thickness of floor topping mixture having a minimum compressive strength of 1800 psi.
UNITED STATES GYPSUM CO - Types LRK, HSLRK, CSD
LATICRETE SUPERCAP L L C - Types LRK, HSLRK
USG MEXICO S A D E V CO - Types LRK, HSLRK, CSD

- System No. 3 (For Use with Item 7A Only)
Finish Floor - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss and 8 in. OC at the perimeter.

- System No. 4
Structural Cement-Fiber Units* - Nom 3/4 in. thick, with long edges tongue and grooved. Long dimension of panels to be perpendicular to wood trusses with end joints staggered a min of 2 ft and centered over the trusses.
UNITED STATES GYPSUM CO - Types SAM, LEVERLOCK® Brand Sound Reduction Board, LEVERLOCK® Brand Floor Underlayment SRM-25

- Finish Flooring - Floor Topping Mixture - Min 3/4 in. thickness of floor topping mixture having a minimum compressive strength of 1800 psi.
UNITED STATES GYPSUM CO - Types LRK, HSLRK, CSD

LATICRETE SUPERCAP L L C - Types LRK, HSLRK

USG MEXICO S A D E V CO - Types LRK, HSLRK, CSD

- Floor Mat Materials* - (Optional) - Floor mat material loose laid over the subfloor.
UNITED STATES GYPSUM CO - Types SAM, LEVERLOCK® Brand Sound Reduction Board, LEVERLOCK® Brand Floor Underlayment SRM-25

- System No. 5
Structural Cement-Fiber Units* - Nom 3/4 in. thick, with long edges tongue and grooved. Long dimension of panels to be perpendicular to wood trusses with end joints staggered a min of 2 ft and centered over the trusses.
UNITED STATES GYPSUM CO - Types STRUCTO-CRETE, USGSP

LATICRETE SUPERCAP L L C - Types LRK, HSLRK

USG MEXICO S A D E V CO - Types LRK, HSLRK, CSD

accordance with installation instructions.

BROAN-NUTONE L L C - Model RDWMT

- 4K. Alternate Ceiling Damper* - Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 87 sq in. with the length not to exceed 9 in. and the width not to exceed 9-11/16 in.
C&S AIR PRODUCTS - Models RD-521-90, RD-521-NP90

POTTORFF - Models CFD-521-90, CFD-521-90NP

- 4D. Alternate Ceiling Damper* - Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 75 sq in. with the length not to exceed 9-3/4 in. and the width not to exceed 9-3/4 in.
DELTA ELECTRONICS INC - Models CRD2, GBR-CRD, IIG-CRD

- 4E. Alternate Ceiling Damper* - Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 75 sq in. with the length not to exceed 9-1/4 in. and the width not to exceed 9-3/4 in.
DELTA ELECTRONICS INC - Model SIG-CRD

- 4F. Alternate Ceiling Damper* - Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 131 sq in. with the length not to exceed 11-1/16 in. and the width not to exceed 11-7/8 in.
DELTA ELECTRONICS INC - Model SMT-CRD

- 4G. Alternate Ceiling Damper* - Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 103 sq in. with the length not to exceed 10-1/8 in. and the width not to exceed 10-1/8 in.
PANASONIC CORPORATION, PANASONIC CORPORATION OF NORTH AMERICA - Model PC-RD05C5

- 4H. Alternate Ceiling Damper* - Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 113 sq in. with the length not to exceed 10-1/8 in. and the width not to exceed 11-1/8 in.
BROAN-NUTONE L L C - Model RDPLWT

- 4I. Alternate Ceiling Damper* - Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 79 sq in. with the length not to exceed 10 in. and the width not to exceed 7-15/16 in.
BROAN-NUTONE L L C - Models RD1N and RDN

- 4J. Alternate Ceiling Damper* - Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 87 sq in. with the length not to exceed 9 in. and the width not to exceed 9-11/16 in.
US GREENFIBER L L C - IN573S, IN574S, IN5750LD, IN5765LD, IN5773LD, & SANCTUARY to be used with dry application only.

- 4K. Alternate Ceiling Damper* - Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 44 sq in. with the length not to exceed 10 in. and the width not to exceed 10-1/8 in.
US GREENFIBER L L C - IN573S, IN574S, IN5750LD, IN5765LD, IN5773LD, & SANCTUARY to be used with dry application only.

- 4L. Alternate Ceiling Damper* - Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 44 sq in. with the length not to exceed 10 in. and the width not to exceed 10-1/8 in.
US GREENFIBER L L C - IN573S, IN574S, IN5750LD, IN5765LD, IN5773LD, & SANCTUARY to be used with dry application only.

- 4M. Alternate Ceiling Damper* - Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 44 sq in. with the length not to exceed 10 in. and the width not to exceed 10-1/8 in.
US GREENFIBER L L C - IN573S, IN574S, IN5750LD, IN5765LD, IN5773LD, & SANCTUARY to be used with dry application only.

- 4N. Alternate Ceiling Damper* - Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 44 sq in. with the length not to exceed 10 in. and the width not to exceed 10-1/8 in.
US GREENFIBER L L C - IN573S, IN574S, IN5750LD, IN5765LD, IN5773LD, & SANCTUARY to be used with dry application only.

- 4O. Alternate Ceiling Damper* - Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 44 sq in. with the length not to exceed 10 in. and the width not to exceed 10-1/8 in.
US GREENFIBER L L C - IN573S, IN574S, IN5750LD, IN5765LD, IN5773LD, & SANCTUARY to be used with dry application only.

- System No. 6
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier - (Optional) - Nom 0.030 in. thick commercial asphalt saturated felt.

- Floor Mat Materials* - (Optional) - Floor mat material 1/8 in. (3 mm) thick loose laid over the subfloor.
HACKER INDUSTRIES INC - FIRM-FILL SCM 125

- Alternate Floor Mat Materials - (Optional) - Floor mat material 1/4 in. (6 mm) thick loose laid over the subfloor.
HACKER INDUSTRIES INC - Type FIRM-FILL SCM 250

- Alternate Floor Mat Materials - (Optional) - Floor mat material 3/8 in. (10 mm) thick loose laid over the subfloor.
HACKER INDUSTRIES INC - Type FIRM-FILL SCM 400

- Alternate Floor Mat Materials - (Optional) - Floor mat material 3/4 in. (19 mm) thick loose laid over the subfloor.
HACKER INDUSTRIES INC - Type FIRM-FILL SCM 750

- Metal Lath (Optional) - (Optional) - For use with 3/8 in. (10 mm), or greater, floor mat materials, 3/8 in. expanded steel diamond mesh, 3.4 lbs/sq yd placed over the floor mat material.
Finish Flooring - Floor Topping Mixture - Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1100 psi.

- System No. 7
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier - (Optional) - Nom 0.030 in. thick commercial asphalt saturated felt.

- Finish Floor* - Mineral and Fiber Board - Min 1/2 in. thick, supplied in sizes ranging from 3 ft by 4 ft to 8 ft by 12 ft.
HOMASOTE CO - Type 440-32 Mineral and Fiber Board

- System No. 8
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier - (Optional) - Nom 0.030 in. thick commercial asphalt saturated felt.

- Floor Mat Materials* - (Optional) - Floor mat material nom 5/64 in. (2 mm) thick adhered to subfloor with Hacker Floor Primer.
HACKER INDUSTRIES INC - Type Hacker Sound-Mat

- System No. 9
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 10
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 11
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 12
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 13
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 14
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 15
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 16
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 17
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 18
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 19
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 20
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 21
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 22
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 23
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 24
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 25
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 26
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 27
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 28
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 29
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 30
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 31
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 32
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

- System No. 33
Subflooring - Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

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