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# LIGNOLOC® COLLATED CELLULOSIC FASTENERS

**CSI Division and Section:**
**06 00 00 WOOD, PLASTICS, COMPOSITES**
**06 05 23 Wood, Plastic, and Composite Fastenings**

## 1.0 RECOGNITION

LignoLoc Collated Cellulosic Fasteners recognized in this report have been evaluated for use as connectors for timber and wood products determining withdrawal and lateral resistance. The withdrawal and lateral resistance of the LignoLoc fasteners comply with the intent of the provisions of the following standard and regulation:

- ASTM D1761-20 Standard Test Methods for Mechanical Fasteners in Wood

## 2.0 LIMITATIONS

Use of the LignoLoc fasteners recognized in this report is subject to the following limitations:

**2.1** LignoLoc fasteners shall be installed in accordance with the manufacturer's published installation instructions, and this report. Where there is a conflict, the most restrictive requirements shall govern.

**2.2** LignoLoc fasteners recognized in this report are produced in Mauerkirchen, Austria.

## 3.0 PRODUCT USE

**3.1 General:** LignoLoc fasteners are used for timber-to-timber or panel-to-timber connections.

**3.2 Design:** Withdrawal and lateral resistance values found in Tables 1 through 4 of this report are ultimate loads and have not been factored for design.

**3.3 Installation:**

The LignoLoc fasteners shall be driven into the substrates with manufacturer recommended pneumatic fastener driving device (FASCO® F44 and F60 LIGNOLOC) without pre-drilling. Fasteners are to be driven to a minimum depth of the fastener length and flush with the surface. Minimal fastener head exposure may be sanded to be flush with the substrate.

## 4.0 PRODUCT DESCRIPTION

Beck America, Inc's LignoLoc is a dowel-type, collated cellulosic fastener manufactured from densified laminated Beech wood. The fasteners are a dowel-type fastener. The shank of the fastener has a circular cross section and is smooth. The fasteners are used for timber-to-timber or panel-to-timber connections. The LignoLoc fasteners are manufactured in multiple diameters (3.7 mm, 4.7 mm and 5.3 mm) and lengths (1.5 inches, 2.0-inches, 2.25 inches, 2.5 inches, 3 inches, and 3.5 inches.). Fastener lengths are specific to each fastener diameter as detailed in Tables 1 and 2, and Figure 1 of this report. The fasteners are collated on a plastic sheet in coils for feeding into the fastener driving device.

## 5.0 IDENTIFICATION

LignoLoc collated cellulosic fasteners are identified by the Beck name and trademark, product name, and listing report number (UEL-5065). The IAPMO Uniform Evaluation Service Mark of Conformity may also be used as shown below:

**IAPMO UES UEL-5065**

## 6.0 SUBSTANTIATING DATA

**6.1** Data in accordance with ASTM D1761-20.

**6.2** Test reports are from laboratories in compliance with ISO/IEC 17025.

## 7.0 STATEMENT OF RECOGNITION

This listing report describes the results of research completed by IAPMO Uniform Evaluation Service on LignoLoc Collated Cellulosic Fasteners to assess conformance to the standards shown in Section 1.0 of this report and serves as documentation of the product certification. Products are manufactured at the location noted in Section 2.2 of this report under a quality control program with periodic inspection under the supervision of IAPMO UES.

**For additional information about this listing report please visit www.uniform-es.org or email us at info@uniform-es.org**

*The products and systems described in this Uniform Evaluation Service (UES) Listing Report have been evaluated for conformance with the references described herein. This document shall only be reproduced in its entirety.*

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## TABLE 1- Ultimate Withdrawal Resistance Values

| Fastener Diameter (mm) | Fastener Length (inches) | Lumber[1] | Sheathing[2] | Connection[3] | Ultimate Load[4] (lbs) |
|---|---|---|---|---|---|
| 3.7 | 2.0 | SPF | N/A | Edge of Framing | 373.6 |
| 4.7 | 2.5 | SPF | N/A | Edge of Framing | 647.3 |
| 4.7 | 3.5 | SPF | N/A | Edge of Framing | 836.1 |
| 5.3 | 2.5 | SPF | N/A | Edge of Framing | 814.6 |
| 5.3 | 3.5 | SPF | N/A | Edge of Framing | 990.1 |
| 5.3 | 2.5 | SYP | N/A | Edge of Framing | 780.1 |
| 5.3 | 4.5 | SYP | N/A | Edge of Framing | 988.5 |
| 4.7 | 2.5 | DF | N/A | Edge of Framing | 740.7 |
| 4.7 | 3.5 | DF | N/A | Edge of Framing | 930.2 |
| 5.3 | 2.5 | DF | N/A | Edge of Framing | 789.4 |
| 5.3 | 3.5 | DF | N/A | Edge of Framing | 969.6 |

[1] SPF=Spruce-Pine-Fur (SG=0.42), SYP= Southern Yellow Pine (SG=0.55), DF=Douglas Fir(SG=0.50).
[2] Sheathing was 15/32 inch thick Plywood, rated sheathing panels.
[3] Edge refers to 2-inch nominal face of Framing, Face refers to 4-inches nominal face of Framing.
[4] Ultimate loads are unfactored. Values where Connection is Plywood to Framing, the failure was the Plywood disengaging from the fastener prior to disengagement of the Framing and therefore a pull through value.

## TABLE 2- Ultimate Withdrawal Resistance Values

| Fastener Diameter (mm) | Fastener Length (inches) | Lumber[1] | Sheathing[2] (inches) | Connection[3] | Ultimate Load[4] (lbs) |
|---|---|---|---|---|---|
| 3.7 | 2.0 | SPF | 15/32 | Through Plywood into Edge of Framing | 131.8 |
| 4.7 | 2.25 | SPF | 15/32 | Through Plywood into Edge of Framing | 234.6 |
| 4.7 | 2.25 | SPF | 15/32 | Through Plywood into Edge of Framing | 234.6 |
| 4.7 | 2.25 | DF | 15/32 | Through Plywood into Edge of Framing | 244.0 |
| 4.7 | 2.5 | SPF | 15/32 | Through Plywood into Edge of Framing | 113.6 |
| 4.7 | 2.5 | DF | 15/32 | Through Plywood into Edge of Framing | 139.5 |
| 5.3 | 3.5 | SYP | 15/32 | Through Plywood into Edge of Framing | 146.1 |

[1] SPF=Spruce-Pine-Fur (SG=0.42), SYP= Southern Yellow Pine (SG=0.55), DF=Douglas Fir(SG=0.50).
[2] Sheathing was 15/32 inch thick Plywood, rated sheathing panels.
[3] Edge refers to 2-inch nominal face of Framing, Face refers to 4-inches nominal face of Framing. All fasteners were installed in the center of each face.
[4] Ultimate loads are unfactored. Values where Connection is Plywood to Framing, the failure was the Plywood disengaging from the fastener prior to disengagement of the Framing and therefore a pull through value.

### TABLE 3- Ultimate Withdrawal Resistance Values

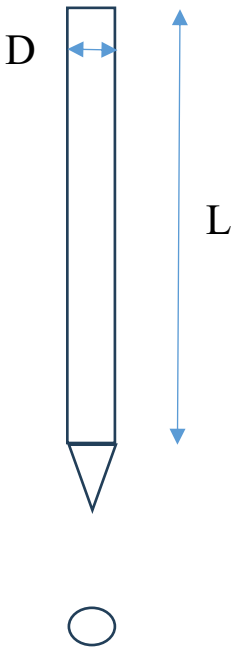
| Fastener Diameter (mm) | Fastener Length (inches) | Lumber[1] | Sheathing[2] (inches) | Connection[3] | Ultimate Load (lbs) |
|---|---|---|---|---|---|
| 3.7 | 2.0 | N/A | 15/32 | Into Plywood Only | 147.0 |
| 4.7 | 2.5 | N/A | 15/32 | Into Plywood Only | 185.8 |
| 5.3 | 3.5 | N/A | 15/32 | Into Plywood Only | 141.9 |

[1] SPF=Spruce-Pine-Fur (SG=0.42), SYP= Southern Yellow Pine (SG=0.55), DF=Douglas Fur(SG=0.50).
[2] Sheathing was 15/32 inch thick Plywood, rated sheathing panels.
[3] Edge refers to 2-inch nominal face of Framing, Face refers to 4-inches nominal face of Framing. All fasteners were installed in the center of each face.

### TABLE 4- Ultimate Lateral Resistance Values

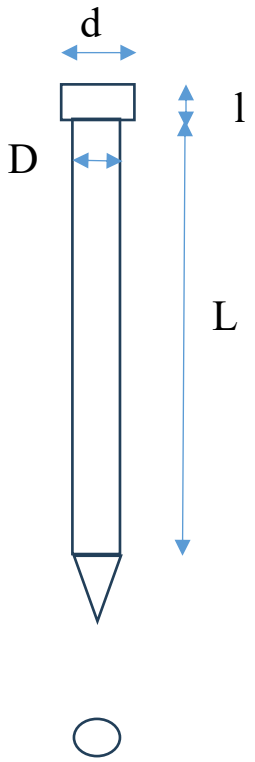
| Fastener Diameter (mm) | Fastener Length (inches) | Lumber[1] | Connection[2,3] | Ultimate Load (lbs) |
|---|---|---|---|---|
| 3.7 | 2.25 | SPF | Through 15/32 Plywood Into Face of Framing | 115.6 |
| 3.7 | 2.25 | SPF | SPF | 126.4 |
| 4.7 | 3 | DF | Through 15/32 Plywood Into Face of Framing | 179.11 |
| 4.7 | 3 | DF | DF | 221.9 |
| 5.3 | 3 | SYP | Through 15/32 Plywood Into Face of Framing | 235.4 |
| 5.3 | 3 | SYP | SYP | 310.79 |

[1] SPF=Spruce-Pine-Fur (SG=0.42), SYP= Southern Yellow Pine (SG=0.55), DF=Douglas Fur(SG=0.50).
[2] Sheathing was 15/32 inch thick Plywood, rated sheathing panels.
[3] Edge refers to 2-inch nominal face of Framing, Face refers to 4-inches nominal face of Framing. All fasteners were installed in the center of each face.




| Diameter (mm) (D) | Length (inch) (L) | Tool |
|---|---|---|
| 3.7 | 2, 2.25 | F44 Pneumatic Nailer |
| 4.7 | 2.5, 3, 3.5 | F60 Pneumatic Nailer |
| 5.3 | 2.5, 3, 3.5 | F60 Pneumatic Nailer |

1 inch= 2.54 mm




| Diameter (mm) (D) | Head Dimensions (mm) d x l | Length (inch) (L) | Tool |
|---|---|---|---|
| 4.7 | 6.3 x 3 to 4 | 2.25 | F60 Pneumatic Nailer |

1 inch= 2.54 mm

**FIGURE 1 – LIGNOLOC FASTENERS**