WiEHAG Glued Laminated Timber

WiEHAG TIMBER CONSTRUCTION GmbH

Initial Acceptance: 07 June 2024 **Expiration:** 07 June 2025

Version: 1.0

TYPE OF ACCEPTANCE

Product Material – Wood, Plastics and Composites
CSI Section 06 18 13 – Glued Laminated Beams

MANUFACTURER IDENTIFICATION

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DESCRIPTION OF THE PRODUCT EVALUATED

This Building Product Evaluation Report (BPER) applies to glued laminated timber (GLT) manufactured by **WiEHAG Timber Construction GmbH** in accordance with ANSI A190.1 and with in-plant manufacturing procedures approved by PFS TECO and identified by brand name **WiEHAG Timber Construction.**

WiEHAG GLT is composed of selected grades of kiln-dried European Spruce lumber ("laminations") with the grain direction of all laminations is oriented parallel to the longitudinal axis of the GLT. Adjacent laminations are face-bonded with adhesive to form a composite structural glued member. Laminations may be comprised of multiple pieces that are end-jointed to create longer lengths. The adhesives used to manufacture **WiEHAG GLT** are exterior-type adhesives meeting the requirements of ANSI 405.

WiEHAG GLT is available in depths of 4 ¾ in to 8-ft 2 3/8-in (120 mm – 2500mm), widths 3 ⅛ in to 10 ¼ in, and lengths up to 164-ft-5 inches (50m); members outside of these parameters are available as special components and are outside the scope of this Report. The maximum lamination thickness is 1 5/8 in (41mm). **WiEHAG GLT** is produced in balanced layups only (i.e. with lamination grades placed symmetrically about the neutral axis of the GLT).

WiEHAG GLT is intended for use as beams and columns in load bearing and non-load bearing applications.

CODES AND STANDARDS APPLICABLE TO PRODUCT

- 2012, 2015, 2018, and 2021 editions of the International Building Code® (IBC)
- 2012, 2015, 2018, and 2021 editions of the International Residential Code® (IRC)
- 2015 and 2018 editions of the National Design Specification® (NDS®) for Wood Construction
- ANSI A190.1-2022 *Standard for Wood Products – Structural Glued Laminated Timber*

PROPERTIES REVIEWED

Testing of **WiEHAG GLT** was conducted in accordance with the applicable Codes and Standards. The evaluation of the testing

and analysis verified that the **WiEHAG GLT** described in Table 1 complies with the requirements of ANSI A190.1.

DESIGN

WiEHAG GLT design properties and capacities are provided in Table 1 in this Report. **WiEHAG GLT** can be used as elements in the design of structural systems, although the design of such systems is beyond the scope of this Report.

Fire resistance of **WiEHAG GLT** can be calculated using Section 16.2 of the NDS.

LIMITATIONS OF ACCEPTANCE

The **WiEHAG GLT** described in this Report comply with or are suitable alternatives to what is specified in those codes listed in the 'Codes and Standards Applicable to Product' section of this Report, subject to the following conditions:

1. The product described in this Report is limited to dry service conditions where the in-service equilibrium moisture content is less than 16%.
2. Design calculations, shop drawings and installation instructions must be furnished to the building official or authority having jurisdiction, verifying that **WiEHAG GLT** beams are used in compliance with this Report and the requirements of the Engineer of Record (EOR).
3. Cutting or notching of **WiEHAG GLT** beams is not permitted, unless provided for in the design.
4. **WiEHAG GLT** beams are manufactured at the WiEHAG manufacturing facility located in Altheim, Austria. Quality control inspections are performed by PFS TECO or its recognized agent.

DOCUMENTATION SUBMITTED

Submitted data was provided in accordance with PFS TECO *Certification and Inspection Policy: Glued Laminated Timber in Accordance with ANSI A190.1*. Test data and analysis was also provided and reviewed in accordance with ANSI A190.1.

PRODUCT IDENTIFCATION

WiEHAG GLT beams and columns described in this Report are identified by a mark bearing the standard (ANSI A190.1), product name, production date and time, stress class, plant number (883), the PFS TECO Building Product Evaluation Report number (BPER 0135), and the PFS TECO certification mark (as shown in Fig. 1).

Fig. 1: PFS TECO certification mark with United States country identifier

Table 1. Reference Design Values for WiEHAG GLT [a]

Strength Class	**Bending About X-X Axis** (Loaded Perpendicular to Wide Faces of Laminations)				**Axially Loaded**		**Fasteners**
	Extreme Fiber in Bending [b] (psi)	Compression Perpendicular to Grain (psi)	Horizontal Shear (psi)	Modulus of Elasticity (10^6 psi)	Tension Parallel to Grain (psi)	Compression Parallel to Grain (psi)	Specific Gravity for Fastener Design
	F_{bx}	$F_{c\perp x}$	F_{vx} [c]	$E_{x\ app}$	F_t	F_c	G
GL 24h	1,650	335	240	1.7	1,350	1,850	0.42
GL 28c	1,950	335	240	1.8	1,350	1,850	0.42
GL 30c	2,050	335	240	1.9	1,350	1,850	0.43

(a) For members stressed primarily in bending. Tabulated design values are for normal load duration and dry service conditions.

(b) WiEHAG GLT is produced only with balanced layups, therefore F_{bx} is the same for positive and negative bending.

(c) The design values for shear (F_{vx}) shall be decreased by multiplying by a factor of 0.72 for non-prismatic members (e.g., members with varied cross section along their length), notched members, and for all members subject to impact or cyclic loading. The reduced design value shall be used for design for members at connections that transfer shear by mechanical fastener. The reduced design value shall also be used for determination of design values for radial tension and torsion.