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Authorised and notified according to Article 10 of the Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products

MEMBER OF EOTA

European Technical Approval ETA-09/0322

This ETA replaces the previous ETA with the same number and validity from 2009-11-12 to 2014-11-12

Trade name:

GH Various Angle Brackets*)

Holder of approval:

GH Baubeschläge GmbH
Austrasse 34
D-73235 Weilheim / Teck
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Generic type and use of construction product:

Three-dimensional nailing plate (angle bracket for timber-to-timber, timber-to-steel and timber-to-concrete connections)

Valid from:
to:

2010-01-05
2015-01-05

Manufacturing plant:

GH Baubeschläge GmbH
Austrasse 34
D-73235 Weilheim / Teck

This European Technical Approval contains:

69 pages including 2 annexes which form an integral part of the document

* see section II.1 of this ETA



European Organisation for Technical Approvals

Europæisk Organisation for Tekniske Godkendelser

I LEGAL BASIS AND GENERAL CONDITIONS

- 1 This European Technical Approval is issued by ETA-Danmark A/S in accordance with:
- Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products¹⁾, as amended by Council Directive 93/68/EEC of 22 July 1993²⁾.
 - Bekendtgørelse 559 af 27-06-1994 (afløser bekendtgørelse 480 af 25-06-1991) om ikrafttræden af EF direktiv af 21. december 1988 om indbyrdes tilnærmelse af medlemsstaternes love og administrative bestemmelser om byggevarer.
 - Common Procedural Rules for Requesting, Preparing and the Granting of European Technical Approvals set out in the Annex to Commission Decision 94/23/EC³⁾.
 - EOTA Guideline ETAG 015 *Three-dimensional nailing plates*, September 2002 edition.
- 2 ETA-Danmark A/S is authorized to check whether the provisions of this European Technical Approval are met. Checking may take place in the manufacturing plant. Nevertheless, the responsibility for the conformity of the products to the European Technical Approval and for their fitness for the intended use remains with the holder of the European Technical Approval.
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- 6 This European Technical Approval is issued by ETA-Danmark A/S in English. This version corresponds fully to the version circulated within EOTA. Translations into other languages have to be designated as such.
- 1) Official Journal of the European Communities N° L40, 11 Feb 1989, p 12.
2) Official Journal of the European Communities N° L220, 30 Aug 1993, p 1.
3) Official Journal of the European Communities N° L 17, 20 Jan 1994, p 34.

II SPECIAL CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of product and intended use

Definition of the product

GH Baubeschläge GmbH various angle brackets covers the following bracket types:

Type AB Top 80, AB Top 120, AB Top 80 Vario, AB Top 120 Vario, AB 1867, AB 2197, AB 110/170S, AB 50/595, AB 80/598, AB 110/5911, type AB 994, AB 1293, AB 645, AB 543, AB 993, AB 653, AB 26910 (nails/dowels), AB16910, AB 3691025 and AB 3691015.

They are one-piece non-welded, face-fixed angle brackets to be used in timber to timber, timber to steel and timber to concrete connections. They are connected to the timber elements by a range of profiled nails or by GH connector screws.

The angle brackets are made from pre-galvanized steel S 250 GD + Z275, S 235 JR + Z275 or DX 51 D + Z275 according to EN 10327:2004 with a minimum yield stress of 235 MPa, a minimum tensile strength R_m of 330 MPa and a minimum ultimate strain A_{80} of 22 % and are available with or without an embossed rib.

Additionally, all the angle brackets can be made from stainless steel 1.4301, 1.4401, 1.4541 or 1.4571 according to EN 10088-2:2005 with a minimum yield stress of 190 MPa. For all stainless steels a factor of 0.8 must be applied to the load-carrying capacity to accommodate for the difference in yield stress.

Dimensions, hole positions and typical installations are shown in Annex A.

Intended use

The angle brackets are intended for use in making connections in load bearing timber structures, as a connection between a beam and a purlin, where requirements for mechanical resistance and stability and safety in use in the sense of the Essential Requirements 1 and 4 of Council Directive 89/106/EEC shall be fulfilled.

The connection may be with a single angle bracket or with an angle bracket on each side of the fastened timber member (see Annex A).

The static and kinematic behaviour of the timber members or the supports shall be as described in Annex B.

The wood members can be of solid timber, glued laminated timber and similar glued members, or wood-based structural members with a characteristic density from 290 kg/m³ to 420

kg/m³. This requirement to the material of the wood members can be fulfilled by using the following materials:

- Structural solid timber classified to C14-C40 according to EN 338 / EN 14081,
- Glulam classified to GL24-GL36 according to EN 1194 / EN 14080,
- LVL according to EN 14374,
- Parallam PSL,
- Intrallam LSL,
- Duo- and Triobalken,
- Layered wood plates,
- Plywood according to EN 636

Annex B states the load-carrying capacities of the angle bracket connections for a characteristic density of 350 kg/m³. For timber or wood based material with a lower characteristic density than 350 kg/m³ the load-carrying capacities shall be reduced by the k_{dens} factor:

$$k_{dens} = \left(\frac{\rho_k}{350} \right)^2$$

Where ρ_k is the characteristic density of the timber in kg/m³.

The design of the connections shall be in accordance with Eurocode 5 or a similar national Timber Code. The wood members shall have a thickness which is larger than the penetration depth of the nails into the members.

The angle brackets are primarily for use in timber structures subject to the dry, internal conditions defined by service class 1 and 2 or the wet conditions defined by service class 3 of Eurocode 5 and for connections subject to static or quasi-static loading.

The angle brackets may also be used for connections between a timber member and a member of concrete or steel.

Assumed working life

The assumed intended working life of the angle brackets for the intended use is 50 years, provided that they are subject to appropriate use and maintenance.

The information on the working life should not be regarded as a guarantee provided by the manufacturer or ETA Danmark. An "assumed intended working life" means that it is expected that, when this working life has elapsed, the real working life may be, in normal use conditions, considerably longer without major degradation affecting the essential requirements.