

## CERTIFICATE OF TECHNICAL APPROVAL

Dubai Central Laboratory Department (DCLD) of Dubai Municipality,  
hereby award this certificate to :

**PEIKKO GROUP OY**

For the product(s)

**STEEL COMPOSITE LOAD BEARING BEAM**

**DELTABEAM®**

(As per the attached details)

Manufactured by :

**PEIKKO GULF LLC**

at factory

**PEIKKO GULF LLC**

**AL HAMRA INDUSTRIAL ZONE, WAREHOUSE WIZ04-2, RAS AL KHAIMAH, UAE**



**AMIN AHMED MOHAMMED AMIN**  
DEPUTY DIRECTOR, DUBAI CENTRAL LABORATORY DEPARTMENT  
DUBAI MUNICIPALITY



TA Certificate No.: 145-2015  
Valid Until : 01/07/2017



Current Issue Date: 10/10/2016  
Original Issue Date: 02/07/2015

*The above product(s) have been assessed and found fit for their intended use, provided they are used according to the supplier instructions.*

*The attached details bearing the same Certificate No. forms an integral part of this certificate.  
This certificate is subject to the Terms and Conditions of the technical approval system*

1. **The Company:**  
PEIKKO GROUP OY
2. **Product trade name:** DELTABEAM®
3. **Manufacturer:** PEIKKO GULF LLC  
Al Hamra Industrial Zone,  
Warehouse WIZ 04-2,  
Ras AL khaimah,  
UAE

4. **Factory name :** PEIKKO GULF LLC

5. **Product description:**

DELTABEAM® is fabricated from steel plates welded to form a trapezoidal box section with ledges on either side of the bottom flange.

DELTABEAM® is a hollow steel beam made from steel plates with holes in the sides to create composite action between the concrete slabs and the DELTABEAM® when filled with in-situ concrete.

it consist of rebars, side plates with two types of holes (air holes and web holes), top plate with casting holes and beam ledges on either side of the bottom flange, all welded together to form a trapezoidal box section. (see annex A for full detail).

6. **Product Type:** Load Bearing composite beam

7. **Product Intended use**

DELTABEAM® is used to create integrated composite beam for flat slab system. When used with precast concrete slabs DELTABEAM® will carry the slabs during installation and the beam will be fulfilled with the in-situ concrete after installation which will create composite action between the slabs and the beam.

DELTABEAM® can be used as load bearing beam for primary and secondary beams in floor and roof structures as per design.

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## Product identification

DELTABEAM® shall be identified as follows:

- The letters " PKDL D##-### " or "PKDL DR##-###" , where D refers to Intermediate beam and DR refers to Edge beam.
- DCL TA mark -DCL -145
- Running number- AX1

Example of identification mark is as shown:

PKDL D20-300 AX1 DCL 145

## 8. Product characteristics

Product characteristic declared is as follows:

Property	Evaluation method	Requirement
Tensile strength for rebars	BS 4449-05; Grade 500 B	> 1.08 f <sub>y</sub> (540 MPa)
Tensile strength for steel plates	EN 10025-2	(470 – 630 )MPa
Load bearing capacity	Calculation as per EN 1994 and BS 5950	≥ as per design load
Bending moment	Calculation as per EN 1994 and BS 5950	≥ as per Design Bending moment
Sheer stress	Calculation as per EN 1994 and BS 5950	≥ as per Design Shear stress
Deflection	Calculation as per EN 1994 and BS 5950	≤ L/250

## 9. Tests Conducted

All test results showed compliance with the requirements regarding Tensile strength, Load bearing capacity, Bending moment, Sheer stress and Deflection.

## 10. Scope of approval

This scope of approval covers " DELTABEAM®" (composite beam) product manufactured using S355J2+N plates for the thickness 5 to 25 mm for all types of DELTABEAM®.

- **Exclusions:**
  - Types other DELTABEAM® (composite beam) **shall not be** covered in the scope of this approval.
  - Plates thickness other than mention above **shall not be** covered in this scope of approval

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## 11. Conditions of approval

- 11.1 This approval is granted only to PEIKKO GROUP OY, no other company, firm or person may hold or claim any entitlement to this Technical Approval.
- 11.2 This Technical Approval will remain valid for the period shown on the Approval Certificate provided that:
- 11.2.1 The characteristics of the product are unchanged,
- 11.2.2 Surveillance checking and/or testing by Dubai Municipality shows compliance with the requirements of this Technical Approval.
- 11.3 In granting this Technical Approval, Dubai Municipality makes no representation as to:
- 11.3.1 The presence or absence of patent or similar rights subsisting in PEIKKO DELTABEAM<sup>®</sup>,
- 11.3.2 The legal right of PEIKKO GROUP OY to market DELTABEAM<sup>®</sup> in the Emirate of Dubai.
- 11.4 The Technical Approval shall not be used in such manner as to bring Dubai Municipality into disrepute and PEIKKO GROUP OY shall not make any statement which Dubai Municipality may consider as misleading.
- 11.5 Surveillance
- 11.5.1 Inspection and testing
- Dubai Municipality maintains the right to inspect the product at any time without prior notice and to collect samples from the product available at client's stores, warehouses or at any building site within Dubai Emirate, for the purpose of verification and/or testing.
- 11.5.2 Declarations of shipments
- PEIKKO GROUP OY shall keep records of all deliveries to customers in Dubai. These records shall be open to examination by Dubai Central Laboratory personnel.
- 11.5.3 Cost of sampling and testing
- PEIKKO GROUP OY shall bear the cost of all surveillance visits, sampling and testing of the product either at Dubai Central Laboratory or at any other laboratory approved by Dubai Central Laboratory. The testing laboratory may be any local, regional or international laboratory.
- 11.6 TA mark shown in the following image shall be part of the labeling/marketing by box marking each product item as well as their containers shall be identified by labeling and/or marking to show the required basic information in Arabic or English language



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11.7 Failing to satisfy the conditions of this Technical Approval Certificate may be grounds for terminating the Technical Approval.

**12. Disclaimer**

12.1 The Dubai Municipality - Dubai Central Laboratory Department shall not be held liable for installation the product in the site.

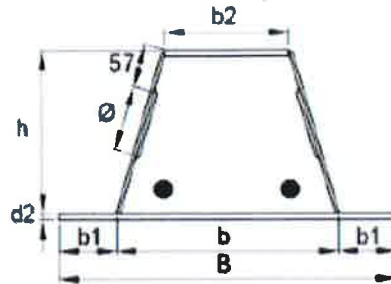
12.2 The Dubai Municipality - Dubai Central Laboratory Department shall not be held liable for any action (legal or otherwise) raised by any party on matters resulting from implementation of the Technical Approval.

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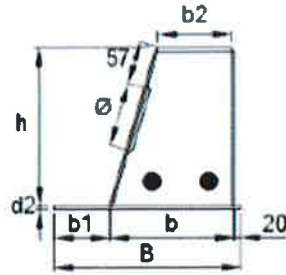
# Annex A

*Mar*



b	B	b1*	b2	d2	h	Ø**
[mm]						
D20-200	395	97,5	100	5-25	200	80
D20-300	495	97,5	180	5 - 25	200	80
D20-400	660	130	278	5 - 25	200	80
D22-300	495	97,5	170	5 - 25	220	80
D22-400	660	130	270	5 - 25	220	80
D25-300	495	97,5	155	5 - 25	250	150
D25-400	660	130	255	5 - 25	250	150
D26-300	495	97,5	148	5 - 25	265	150
D26-400	660	130	245	5 - 25	265	150
D30-300	495	97,5	130	5 - 25	300	150
D30-400	660	130	230	5 - 25	300	150
D32-300	495	97,5	110	5 - 25	320	150
D32-400	660	130	210	5 - 25	320	150
D37-400	660	130	180	5 - 25	370	150
D37-500	760	130	278	5 - 25	370	150
D40-400	660	130	180	5 - 25	400	150
D40-500	760	130	278	5 - 25	400	150
D50-500	760	130	230	5 - 25	500	150
D50-600	860	130	330	5 - 25	500	150

Figure 1: DELTABEAM (Intermediate Beam)



	b	B	b1*	b2	d2	h	Ø**
	[mm]						
DR20-215	335	100	148	5 - 25	200	80	
DR20-245	365	100	180	5 - 25	200	80	
DR22-290	370	100	180	5 - 25	220	80	
DR25-260	380	100	180	5 - 25	250	150	
DR26-230	350	100	148	5 - 25	265	150	
DR26-260	380	100	180	5 - 25	265	150	
DR26-290	410	100	210	5 - 25	265	150	
DR26-325	445	100	245	5 - 25	265	150	
DR30-270	390	100	180	5 - 25	300	150	
DR32-250	370	100	148	5 - 25	320	150	
DR32-285	405	100	180	5 - 25	320	150	
DR32-310	430	100	210	5 - 25	320	150	
DR32-365	485	100	245	5 - 25	320	150	
DR37-325	475	130	210	5 - 25	370	150	
DR40-295	445	130	180	5 - 25	400	150	
DR50-350	500	130	210	5 - 25	500	150	

\*standard size unless the customer otherwise defines (minimum 20 mm).

\*\*c/c distribution for web holes is always 300 mm.

Figure 2 : DELTABEAM (Edge beam)



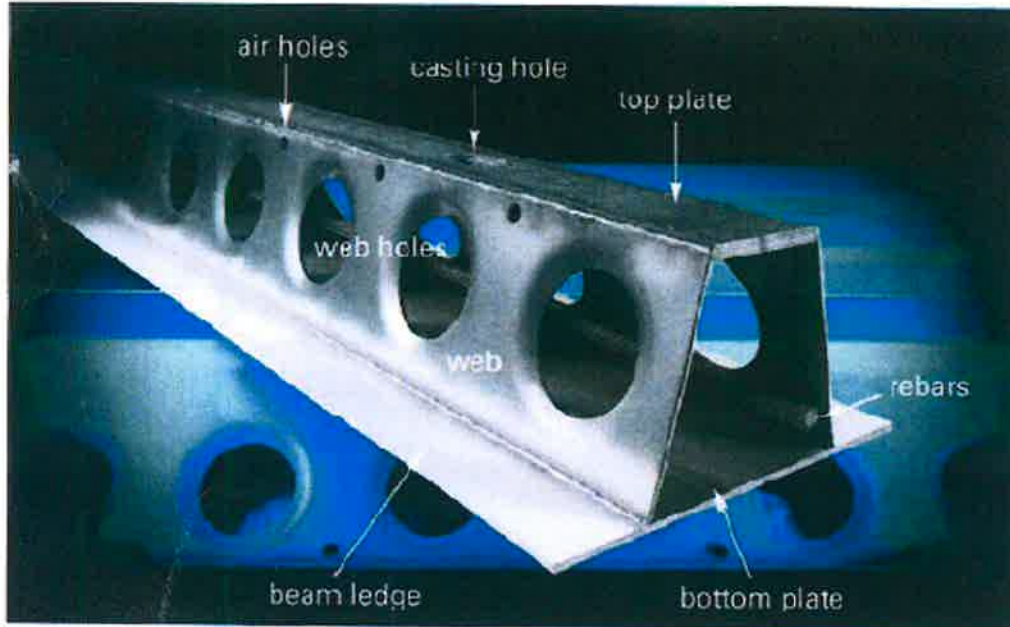


Figure 3 : DELTABEAM