

## Notification

**regarding the amendment to and extension of  
the period of validity of the  
National Technical Approval  
of 20 December 2010**

Approval body for construction products and forms  
of construction

Building technology testing Institute

A public institution supported jointly by the German  
Federation and the German Federal States

Member of EOTA, UEAtc and WFTAO

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Approval No:

**Z-34.14-209**

Period of validity:

from: **1 May 2013**

to: **1 May 2018**

Applicant:

**Friedr. Ischebeck GmbH**

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Object of approval:

**TITAN injection piles**

This Notification amends and extends the period of validity of National Technical Approval  
No. Z-34.14-209 of 20 December 2010.

This Notification comprises two pages and one annex. It is only valid in conjunction with the  
aforementioned National Technical Approval and may only be used together with said approval.

## **Re: II      SPECIFIC PROVISIONS**

The specific provisions of the National Technical Approval are amended as follows:

**1.      Section 2.1.6 is amended thus:**

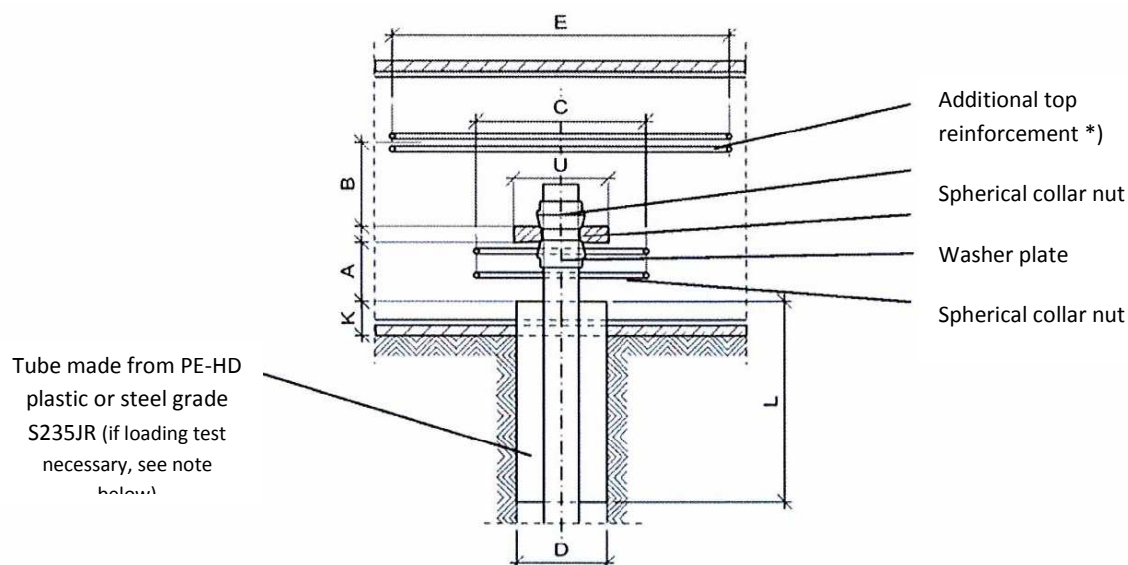
The first sentence in the second paragraph is to be phrased as follows:

In the case of compression piles, additional top and bottom reinforcement is to be provided as shown in Annex 5.

**2.      Annex 5 of National Technical Approval No. Z-34.14-209 of 20 December 2010 is to be replaced by Annex 5 to this Notification.**

Anneliese Böttcher  
Head of Department

Certified



Verification of the transfer of the pile forces relevant for the design within the foundation, including verification of the uniformly distributed load, is to be carried out according to the valid technical codes of practice (e.g. DIN 1045-1).

\*) Additional top and bottom reinforcement each comprising n layers is required for piles with a plastic tube in addition to the reinforcement required for structural purposes. Furthermore, the following distances are to be maintained:

min. edge distance of axis of pile from edge of foundation:  $R \geq 1.5B + 0.5U$

min. centre-to-centre spacing of piles:  $X \geq 3B + U$

			TITAN type								
			30/11	40/20	40/16	52/26	73/53	73/45	73/35	103/78	103/51
*) Additional top reinf., grade BSt 500 S	B	mm	80	100	100	130	180	180	180	260	260
	Ø	mm	8	8	8	10	12	12	12	16	16
	n	--	2	2	2	2	2	2	2	2	2
	E	mm	340	415	425	540	725	760	760	1025	1050
*) Additional btm. reinf., grade BSt 500 S	Ø	mm	8	10	10	12	14	16	16	16	16
	n	--	2	2	2	2	2	2	2	3	4
	C	mm	180	215	225	275	355	390	390	500	545
Washer plate	U	mm	100	115	125	145	175	210	210	240	285
Tube	min K	mm	100	100	100	100	100	100	100	100	100
	min A	mm	100	100	100	125	140	140	140	170	225
	min L	mm	370	460	530	580	700	800	820	860	960
	D	The diameter of the tube is to be chosen so that the grout cover c is maintained; see specific provisions, section 3.2.2.									
Plastic tube	Wall thk. min t	mm	2.7	2.7	2.7	4.3	4.9	4.9	4.9	4.9	4.9
Steel tube	Wall thk. min t	mm	4.1	4.6	4.6	5.4	6.7	6.7	6.7	8.8	8.8

Note: When piles that have been subjected to a compression loading test are to be used as structural piles, the tube during the loading test is to be made from steel grade S235, see section 4.1.

**TITAN injection pile**

**Head of pile, compression pile**

**Annex 5**