



Spun Column Technology — A new dimension
in concrete column innovation

ARCHITECTURE

EURO  POLES



Aesthetics and design combined with innovation and technology

- FULLY ENGINEERED
- BEAUTIFULLY FINISHED
- ELEGANTLY SLENDER



*Figs. 1/3: Opera House Erfurt
[Jörg Friedrich + Partner, Hamburg]
Fig. 2: Lufthansa Aviation Center, Frankfurt
[Ingenhoven Architekten, Düsseldorf]*



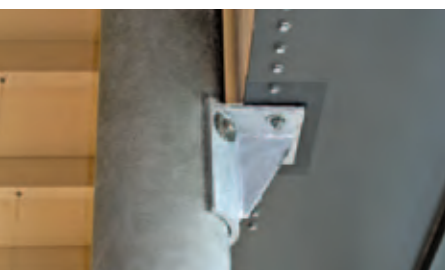
Filling with concrete by a concreting truck



Compaction of the concrete in a rotational unit



Construction detail



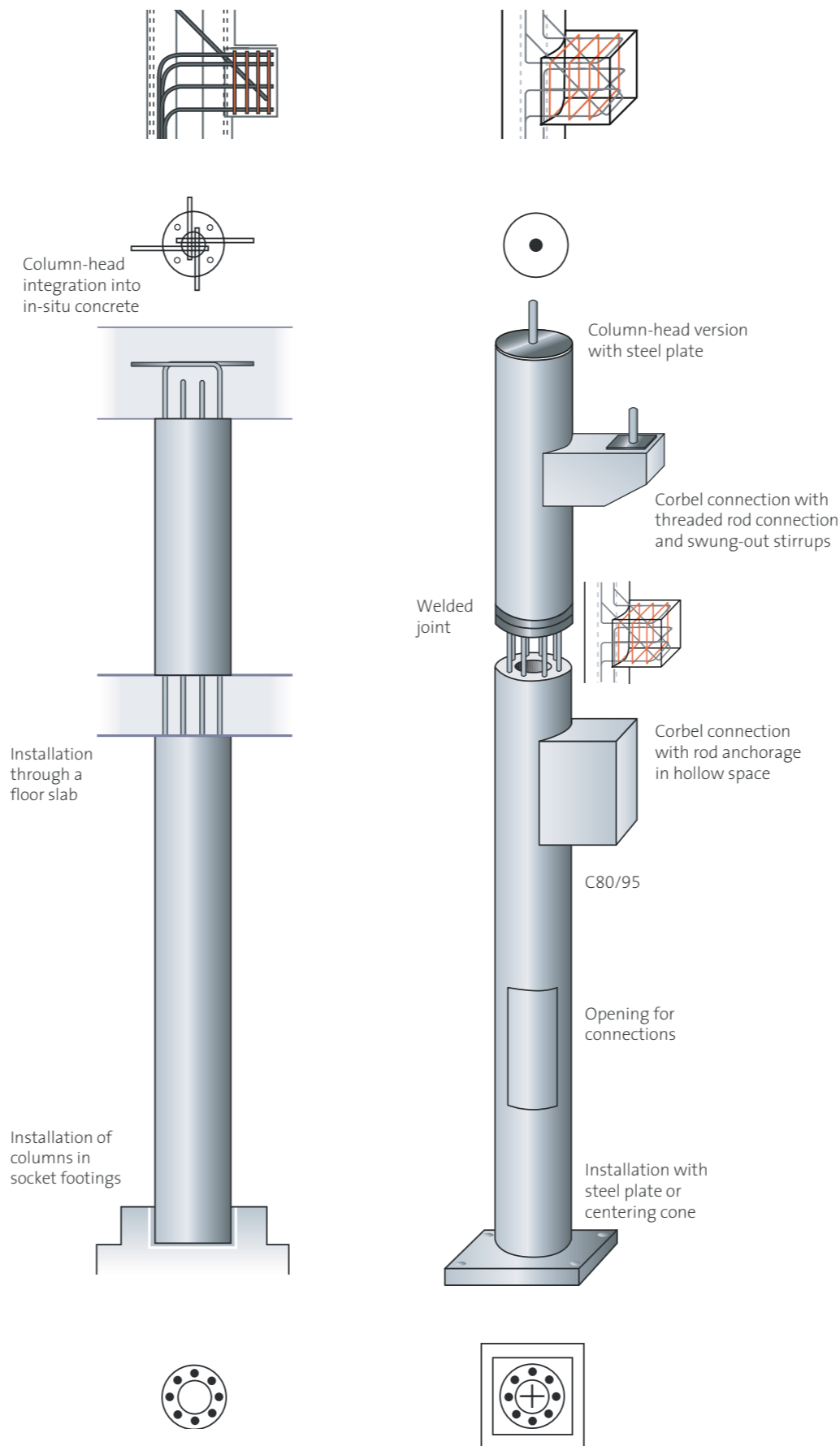
Connection details

What is spun concrete technology?

It's the use of a high strength concrete mix with a low water content that is spun in a high speed rotating mould to form a smooth, dense, blemish free concrete surface. The specially designed concrete mix is compressed and compacted against the interior of the rotating mould, eliminating air voids and producing the most durable concrete on the external surface.

The columns can be circular, tapered, faceted, rectangular or square in section. They can be cast in short lengths or long 35 m lengths. The options are wide ranging and can be designed to meet most building requirements. The factory made product is fully engineered and load bearing. It is quick to install and beautifully finished.

The columns can be produced with a fine glass smooth finish, or a textured and patterned surface using formliners or grit blasted and polished to reveal the aggregate colour. The column colours can vary from a natural grey to a natural white or can be pigmented in range of modern tones to suit the architectural context and expression.



IKEA, Dresden, under construction



Figs. 1/4: Humboldt University, Berlin [Augustin und Frank Architekten, Berlin]. Fig. 2: CityPalais, Duisburg [Chapman Taylor Architekten, Düsseldorf].
Fig. 3: Kassel Wilhelmshöhe railway station [Brandt & Böttcher, Berlin; Peter Schuck, Kassel]



Fully Engineered

The columns can be designed to resist most combinations of bending moment, wind force, shear stress and gravity loads arising from the building structure. As the spun columns can accommodate both prestressed and normal reinforcement arrangements the column can be engineered to produce the slimmest column section for any given loading condition. They are

lightweight and easy to handle. Spun columns are slim compared to other concrete columns supporting the same load, and increase net lettable floor area when specified and increase building rental income.

They can be cast as one continuous section made up of a multiple of column lengths with openings for the suspended slab reinforcement or steel work; or cast as single storey elements

with a choice of end connections to suit both steel floors and concrete floors.

Their high strength to weight ratio, optimum slenderness, structural compatibility, inherent fire resistance and fast site installation makes them the most cost efficient column to specify. No formwork is required, no concrete is needed to be poured on site, no strike time to wait, no rebar to fix, no

delays and no fears concerning the standard of finish. It will always be of the highest integrity and finest quality of surface finish.

The required column diameter to support specific load and details for different end and splice conditions, can be assessed from the load tables and diagrams prepared by Eurocoles as the back of the brochure.



Karstadt department store, Leipzig [RKW Architekten, Düsseldorf]



Administration Building of Pfeiderer AG, Neumarkt [Hadi Teherani, Hamburg], with blue polished round columns

Beautifully Finished

Spun columns will always produce a dense, hardwearing, smooth exterior concrete finish due to the careful blend of the constituent materials, the low water cement ratio and compaction of materials as it is centrifuged.

Choice of colour, surface texture and tone can be tailored to compliment the character of the building or make a visual impact. Light-fast inorganic pigments that are chemically stable are used in the pigmented colour mixes. Bright, intense colours may be achieved with white concrete mixes while more earth tinted colours are produced using grey cements.

For an exposed aggregate finish the column surface may be grit blasted or terrazzo polished once it has hardened. The choice of aggregate type and coloration – granite, limestone, basalt – gives a naturally coloured stone finish to the surface.

Surface texture and profiling can also be achieved without abrasion using rubber formliners placed on the inside of the cylindrical mould. The two part liquid rubber mixture that makes the formliner, is poured into a suitably textured or imprinted master mould laid out on a flat bed. When the rubber hardens it is lifted out of the master mould and placed inside the cylindrical mould and then spun.



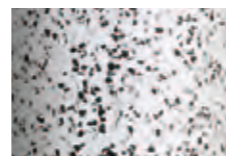
Art and exhibition hall, Bonn [Gustav Peichl, Vienna]



Selection of surfaces:



Grey / smooth



Stracciatella / sandblasted



Blue / sandblasted



Red / granulated



White / granulated



Red / smooth



Shell limestone / chiselled



Yellow / structured



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Centre for the Medical Fraternity in Düsseldorf
[RKW Architekten, Düsseldorf]



Thermal baths near Lake Constance, Überlingen
[Prof. Dr. Rudolf Wienands, Munich]

Elegantly Slender

By prestressing the columns the concrete is put into compression, and this enhances its robustness and stability, making it possible to manufacture very slender column sections.

Techniques to manufacture columns with angled base plates, enables spun columns to be built with a splay or at a slanted alignment, offering innovative and imaginative column arrangements to frames and floors.

The hollow column shell created by the spun concrete process not only reduces the weight of the columns, it also offers a hidden conduit for services and for rainwater disposal.



Humboldt University, Berlin
[Augustin und Frank Architekten, Berlin]



Fig. 1: The Modern Pinakothek Museum, Munich [Stephan Braunfels, Munich]



Fig. 2: Department for foreign affairs, Berlin [Müller Reimann Architekten, Berlin]



Fig. 3: Grammar School, Markt Indersdorf [Allmann Sattler Wappner Architekten, Munich]



The German Supreme Court, Karlsruhe [Dohle & Lohse, Braunschweig]

Advantages at a glance

- Slender column profiles with the finest surface finish
- Engineered, fully fire protected columns to the required load specification
- Delivery of columns ready for site installation
- Extensive range of colours, textures and cross section geometry
- Circular, tapered, rectangular, faceted and square column shapes
- Versatile for use in concrete framed and steel framed building
- Manufactured in multiple storey high lengths or single storey lengths
- Cost effective designs that will speed frame construction
- Slim columns increase net lettable floor space

WHY NOT GET IN TOUCH WITH EUROPOLES TODAY AND FIND OUT MORE ABOUT INNOVATIVE SPUN COLUMN TECHNOLOGY?

Throughout Europe, the name Eurocoles stands for columns, pole and tower construction at highest quality levels. Production plants in Germany – certified in accordance with DIN EN ISO 9001:2000 – as well as project and sales offices in all of Europe, plan and implement carrier systems for the following competency fields.

Eurocoles combines innovation with tradition and expertise, together with the long experience of committed experts. The result is added value in quality and in performance.

Poles and towers made of steel, concrete, and fibreglass-reinforced synthetics – this is what we get excited about.

- COMPANY
- LIGHT & LIFE
- ENERGY
- COMMUNICATIONS
- SURFACE & DESIGN
- MOBILITY
- BUILDINGS & SECURITY

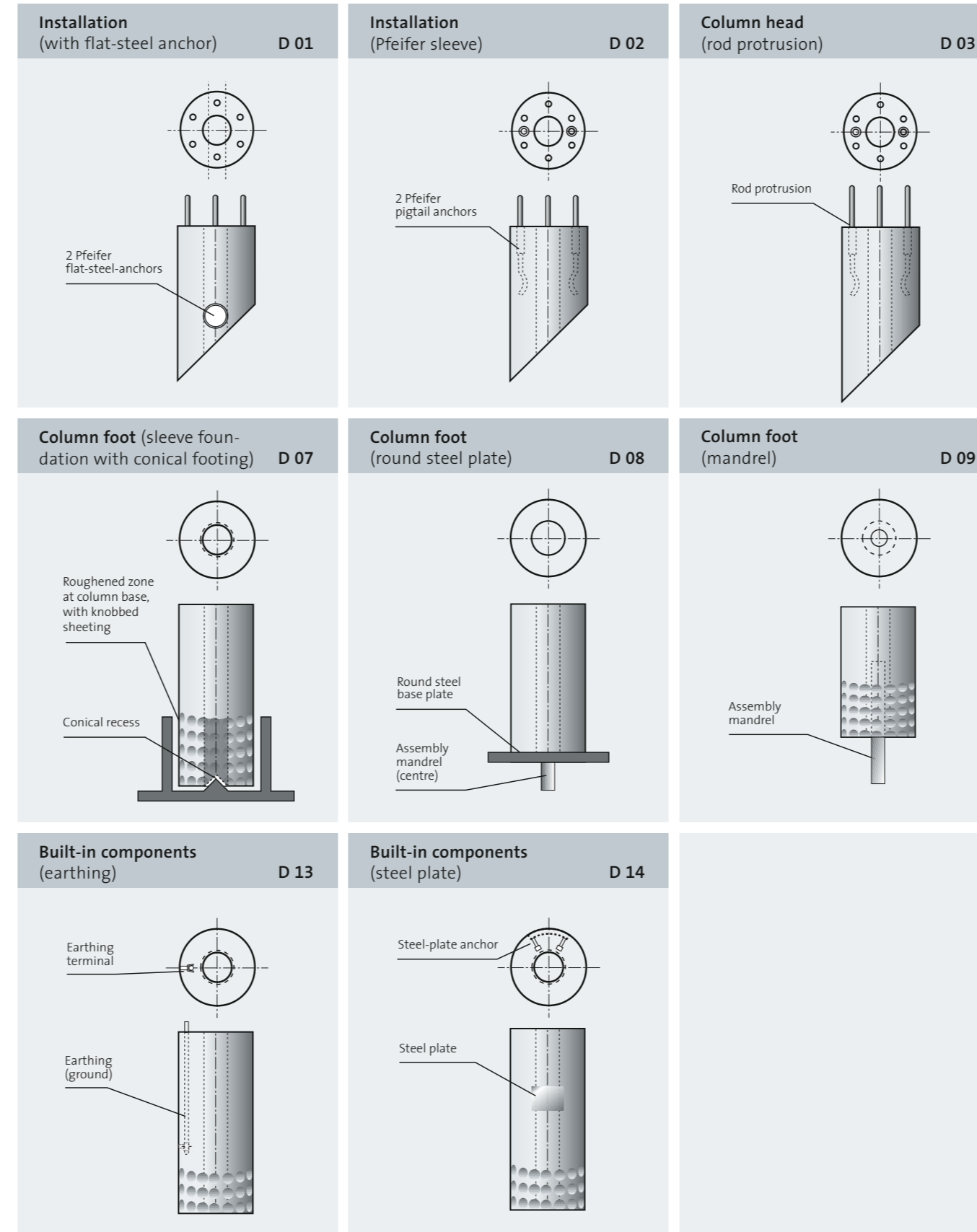
Characteristic loads (service loads) in kN

C 80/95 Percentage of reinforcement: 9 %		Preliminary-design table for spun-concrete columns after official approval of Euro poles; satisfies stipulations as per F120											
Length [m]	Outer column diameter [mm] ¹												
	Ø 200	Ø 250	Ø 300	Ø 350	Ø 400	Ø 450	Ø 500	Ø 550	Ø 600	Ø 700	Ø 800	Ø 950	Ø 1.100
3	864	1.769	3.000	4.280	5.880	7.660	9.390	11.750	13.890	18.950	25.150	36.200	48.300
4	669	1.488	2.610	3.900	5.530	7.300	9.040	11.390	13.510	18.530	24.700	35.800	47.800
5	520	1.180	2.220	3.520	5.170	6.960	8.750	11.100	13.220	18.260	24.450	35.500	47.500
6	350	960	1.770	3.070	4.730	6.510	8.360	10.740	12.870	17.940	24.140	35.200	47.200
8	195	510	1.170	2.125	3.600	5.500	7.000	9.500	11.300	16.500	23.000	34.000	46.000
10	115	315	775	1.380	2.600	4.100	5.800	8.000	10.100	15.200	21.500	33.100	45.100
11	105	270	620	1.160	2.120	3.530	5.180	6.970	9.300	14.330	20.200	32.050	43.500
12	85	230	520	975	1.860	3.060	4.610	6.370	8.600	13.630	19.500	30.000	42.000
13	70	200	420	810	1.550	2.540	4.050	5.740	7.820	12.670	18.420	28.550	40.100
14	65	150	390	700	1.370	2.220	3.590	5.140	7.150	11.830	17.570	27.780	39.500
15			340	630	1.220	1.960	3.180	4.620	6.510	11.110	16.690	27.150	38.870
16			310	560	990	1.730	2.680	4.120	5.810	10.420	15.990	26.580	38.730
18					800	1.370	2.150	3.270	4.420	8.610	13.980	24.270	36.770
20					970	1.140	1.750	2.650	3.750	6.960	11.890	21.860	34.200
22					560	950	1.480	2.150	3.100	5.740	9.790	19.330	31.230
24					490	820	1.250	1.840	2.610	4.840	8.250	16.410	28.430
28					470	610	920	1.270	1.910	3.550	6.060	12.060	21.630

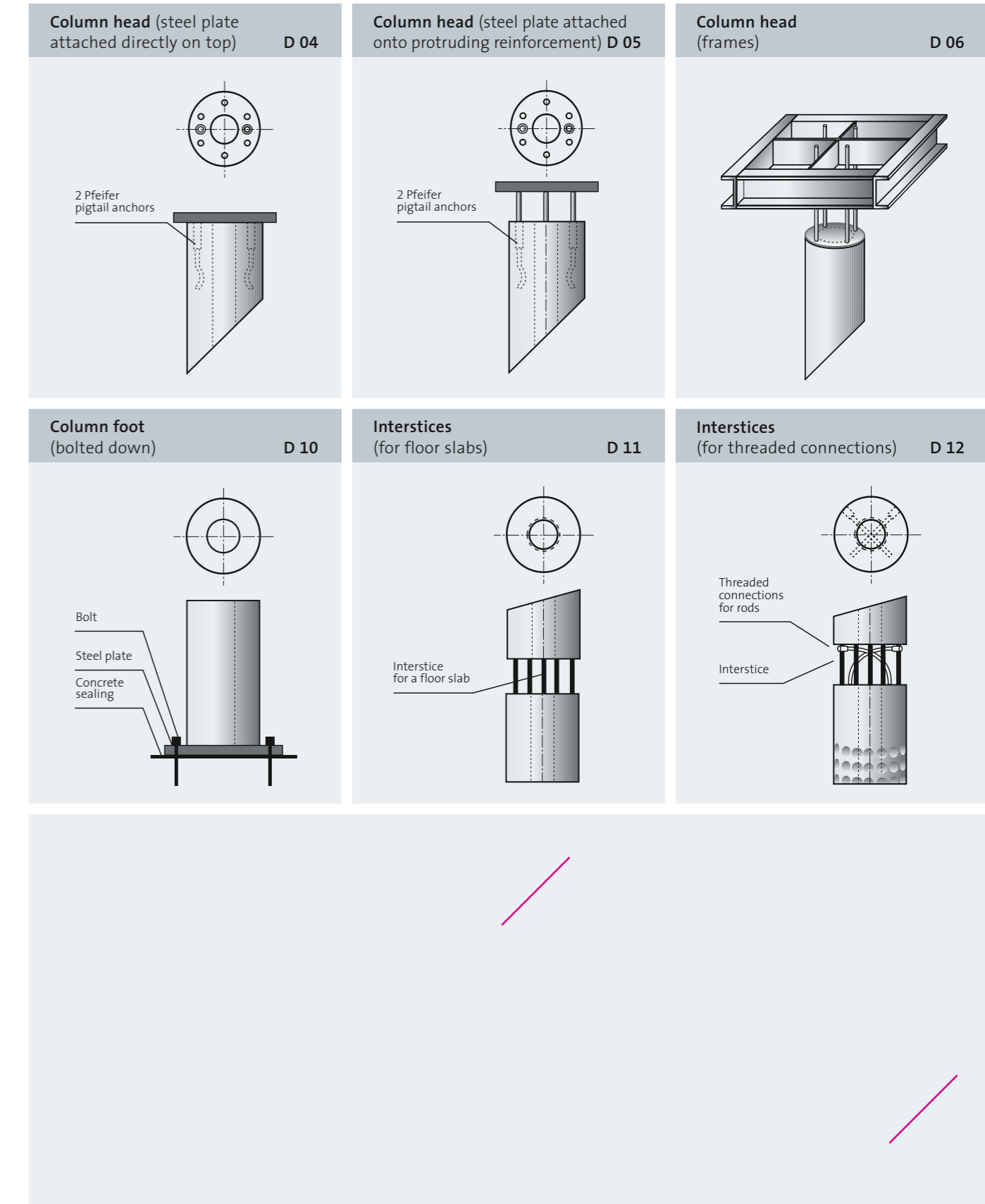
¹⁾ Hollow core of the column D, ≥ 1/3 x D, ■ Loads in accordance with DIN 1045/1 fire-protection certification takes place in accordance with an expert opinion (project-related).
■ Calculation with α²-method. Conventional high-rise columns, with full-surface over the cross-section at the head and foot.

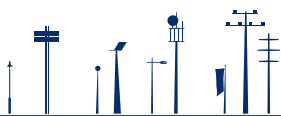
C 80/95 Percentage of reinforcement: 15 %		Preliminary-design table for spun-concrete columns after official approval of Euro poles; satisfies stipulations as per F120											
Length [m]	Outer column diameter [mm] ²												
	Ø 250	Ø 300	Ø 350	Ø 400	Ø 450	Ø 500	Ø 550	Ø 600	Ø 700	Ø 800	Ø 950	Ø 1.100	
3	2.350	3.850	5.250	7.550	9.650	12.100	14.800	18.800	25.300	33.100	47.100	62.800	
4	1.900	3.300	4.750	7.000	9.150	11.600	14.400	18.200	24.700	32.500	46.400	62.100	
5	1.400	2.750	4.250	6.450	8.750	11.200	14.000	17.800	24.300	32.400	46.100	61.700	
6	1.050	2.200	3.700	5.800	8.150	10.700	13.500	17.300	23.900	31.800	45.700	61.300	
8	590	1.310	2.500	4.500	7.000	9.500	12.500	15.800	22.600	30.700	44.700	60.200	
10	370	840	1.610	4.300	5.500	8.000	10.800	13.800	20.800	29.200	43.300	58.500	
11	310	690	1.320	2.290	3.930	6.450	9.500	12.700	19.700	28.100	42.400	57.800	
12	250	580	1.110	2.200	3.300	5.550	8.500	11.400	18.400	26.900	41.500	56.500	
13				1.750	3.050	4.800	7.200	11.250	17.100	26.300	40.400	55.400	
14				1.520	2.600	4.200	6.300	9.150	15.700	25.000	39.200	54.500	
15				1.310	2.250	3.700	5.600	8.100	14.400	23.500	37.800	53.400	
16				1.150	2.000	3.250	4.950	7.200	13.000	22.000	36.200	52.100	
18				900	1.550	2.550	3.950	5.800	10.600	19.000	32.600	49.100	
20				740	1.270	2.050	3.150	4.700	8.750	16.200	29.000	45.300	
22				590	1.060	1.700	2.600	3.850	7.300	13.700	25.400	41.300	
24				490	870	1.450	2.200	3.250	6.100	11.600	22.000	37.300	
28				350	620	1.030	1.600	2.420	4.350	8.550	16.600	29.500	

²⁾ Hollow core of the column D, ≥ 1/3 x D, ■ Loads in accordance with DIN 1045/1 fire-protection certification takes place in accordance with an expert opinion (project-related).
 Conventional high-rise columns, with full-surface over the cross-section at the head and foot. Intermediate lengths and extra-long dimensions available upon request.



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