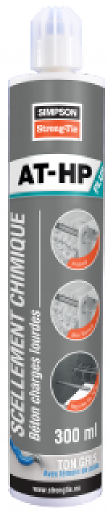
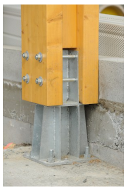
Noticia Técnica

AT-HP PLUS - RESINA PARA MúLTIPLES MATERIALES CON INDICADOR DE MONTAJE

SIMPSON Strong-Tie





Esta resina de adhesión química AT-HP Plus abarca el 100 % de las aplicaciones habituales de mampostería maciza y hueca. Se puede utilizar sin riesgo en interior (COV A+) y garantiza una fijación fácil y eficaz gracias a una innovación exclusiva: el indicador de montaje Simpson Strong-Tie.

ETA-19/0265, ETA-19/0418, ES-FDS / AT-HP PLUS

CARACTERíSTICAS

R 30 INTERIOR EXTERIOR

Materia

- Resina de metacrilato sin estireno.
- Varilla roscada : acero electrocincado y acero inoxidable A4-70.

Ventajas

- Alto valor de adhesión en el hormigón y la mampostería.
- Muy buen comportamiento en perforación húmeda y/o mojada.
- Resistencia al fuego.
- 2 DITE para las varillas roscadas en el hormigón y la mampostería.
- 1 DITE para la colocación de varillas de hierro en el hormigón.

APLICACIONES

Soporte

- Hormigón, hormigón celular.
- Ladrillo hueco y macizo.
- Piedra sillar hueca y maciza.

Campos de aplicación

- Colocación de varillas de hierro en el hormigón.
- Fijación de vigas, escuadras de revestimiento de fachada.
- Fijación de vigas metálicas, grúas de puente.
- Fijación de barandillas, andamios.

SIMPSON Strong-Tie

DATOS TÉCNICOS

Références

Modelo	Product information				
	Grey color	Beige color	Content [ml]	Weigth [kg]	Packaging qty [pcs]
ATHP300PLUSG-FR	x	-	300	0.575	12
ATHP420PLUSG-FR	x	-	420	0.828	12

Design resistance – Tension – NRd [kN] – hef = 8d – Carbon steel 5.8

Modelo	Design resistance – h_{ef} = 8d – Carbon steel 5.8							
	Tension - N_{Rd} [kN]							
	Cracked concrete				Non-cracked concrete			
	C20/25	C30/37	C40/50	C50/60	C20/25	C30/37	C40/50	C50/60
AT-HP PLUS + LMAS M8	-	-	-	-	10.7	12	12	12
AT-HP PLUS + LMAS M10	-	-	-	-	15.9	17.8	19.3	19.3
AT-HP PLUS + LMAS M12	8.4	8.8	9	9.2	21.7	24.3	26.7	28
AT-HP PLUS + LMAS M16	15	15.6	16.1	16.4	34.3	38.4	42.2	44.6
AT-HP PLUS + LMAS M20	-	-	-	-	50.2	56.3	61.8	65.3
AT-HP PLUS + LMAS M24	-	-	-	-	67.5	75.6	83.1	87.8

Concrete :
1. The design loads have been calculated using the partial safety factors for resistances stated in ETA-approval(s). The loading figures are valid for unreinforced concrete and reinforced concrete with a rebar spacing s ≥ 15 cm (any diameter) or with a rebar spacing s ≥ 10 cm, if the rebar diameter is 10mm or smaller.
2. The figures for shear are based on a single anchor without influence of concrete edges. For anchorages close to edges (c ≤ max [10 hef; 60d]) the concrete edge failure shall be checked per ETAG 001, Annex C, design method A.
3. Concrete is considered non-cracked when the tensile stress within the concrete is\sigmaL +\sigmaR ≤ 0. In the absence of detailed verification \sigmaR = 3 N/mm² can be assumed (\sigmaL equals the tensile stress within the concrete induced by external loads, anchors loads included).

Design resistance – Tension – NRd [kN] – hef = 12d – Carbon steel 5.8

Modelo	Design resistance – h_{ef} = 12d – Carbon steel 5.8							
	Tension - N_{Rd} [kN]							
	Cracked concrete				Non-cracked concrete			
	C20/25	C30/37	C40/50	C50/60	C20/25	C30/37	C40/50	C50/60
AT-HP PLUS + LMAS M8	-	-	-	-	12	12	12	12
AT-HP PLUS + LMAS M10	-	-	-	-	19.3	19.3	19.3	19.3
AT-HP PLUS + LMAS M12	12.7	13.2	13.5	13.8	28	28	28	28
AT-HP PLUS + LMAS M16	22.5	23.4	24.1	24.5	51.4	52.7	52.7	52.7
AT-HP PLUS + LMAS M20	-	-	-	-	75.4	82	82	82
AT-HP PLUS + LMAS M24	-	-	-	-	101.3	113.4	118	118

SIMPSON Strong-Tie

Concrete:
1. The design loads have been calculated using the partial safety factors for resistances stated in ETA-approval(s). The loading figures are valid for unreinforced concrete and reinforced concrete with a rebar spacing s ≥ 15 cm (any diameter) or with a rebar spacing s ≥ 10 cm, if the rebar diameter is 10mm or smaller.
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Design resistance – Tension – NRd [kN] – hef = 8d – Stainless steel A4-70

Modelo	Design resistance – h_{ef} = 8d – Stainless steel A4-70							
	Tension - N_{Rd} [kN]							
	Cracked concrete				Non-cracked concrete			
	C20/25	C30/37	C40/50	C50/60	C20/25	C30/37	C40/50	C50/60
AT-HP PLUS + LMAS M8	-	-	-	-	10.7	12	13.2	13.9
AT-HP PLUS + LMAS M10	-	-	-	-	15.9	17.8	19.6	20.7
AT-HP PLUS + LMAS M12	8.4	8.8	9	9.2	21.7	24.3	26.7	28.2
AT-HP PLUS + LMAS M16	15	15.6	16.1	16.4	34.3	38.4	42.2	44.6
AT-HP PLUS + LMAS M20	-	-	-	-	50.2	56.3	61.8	65.3
AT-HP PLUS + LMAS M24	-	-	-	-	67.5	75.6	83.1	87.8

Concrete :
1. The design loads have been calculated using the partial safety factors for resistances stated in ETA-approval(s). The loading figures are valid for unreinforced concrete and reinforced concrete with a rebar spacing s ≥ 15 cm (any diameter) or with a rebar spacing s ≥ 10 cm, if the rebar diameter is 10mm or smaller.
2. The figures for shear are based on a single anchor without influence of concrete edges. For anchorages close to edges (c ≤ max [10 hef; 60d]) the concrete edge failure shall be checked per ETAG 001, Annex C, design method A.
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Design resistance – Tension – NRd [kN] – hef = 12d – Stainless steel A4-70

Modelo	Design resistance – h_{ef} = 12d – Stainless steel A4-70							
	Tension - N_{Rd} [kN]							
	Cracked concrete				Non-cracked concrete			
	C20/25	C30/37	C40/50	C50/60	C20/25	C30/37	C40/50	C50/60
AT-HP PLUS + LMAS M8	-	-	-	-	13.9	13.9	13.9	13.9
AT-HP PLUS + LMAS M10	-	-	-	-	21.9	21.9	21.9	21.9
AT-HP PLUS + LMAS M12	12.7	13.2	13.5	13.8	31.6	31.6	31.6	31.6
AT-HP PLUS + LMAS M16	22.5	23.4	24.1	24.5	51.4	57.6	58.8	58.8
AT-HP PLUS + LMAS M20	-	-	-	-	75.4	84.4	92	92
AT-HP PLUS + LMAS M24	-	-	-	-	101.3	113.4	124.6	131.7

Concrete :

Noticia Técnica

AT-HP PLUS - RESINA PARA MúLTIPLES MATERIALES CON INDICADOR DE MONTAJE

1. The design loads have been calculated using the partial safety factors for resistances stated in ETA-approval(s). The loading figures are valid for unreinforced concrete and reinforced concrete with a rebar spacing s ≥ 15 cm (any diameter) or with a rebar spacing s ≥ 10 cm, if the rebar diameter is 10mm or smaller.
2. The figures for shear are based on a single anchor without influence of concrete edges. For anchorages close to edges (c ≤ max [10 hef; 60d]) the concrete edge failure shall be checked per ETAG 001, Annex C, design method A.
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Design resistance – Shear – VRd [kN] – hef = 8d – Carbon steel 5.8

Modelo	Design resistance – h_{ef} = 8d – Carbon steel 5.8							
	Shear - V_{Rd} [kN]							
	Cracked concrete				Non-cracked concrete			
	C20/25	C30/37	C40/50	C50/60	C20/25	C30/37	C40/50	C50/60
AT-HP PLUS + LMAS M8	-	-	-	-	7.2	7.2	7.2	7.2
AT-HP PLUS + LMAS M10	-	-	-	-	12	12	12	12
AT-HP PLUS + LMAS M12	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8
AT-HP PLUS + LMAS M16	30	31.2	31.2	31.2	31.2	31.2	31.2	31.2
AT-HP PLUS + LMAS M20	-	-	-	-	48.8	48.8	48.8	48.8
AT-HP PLUS + LMAS M24	-	-	-	-	70.4	70.4	70.4	70.4

Concrete :

1. The design loads have been calculated using the partial safety factors for resistances stated in ETA-approval(s). The loading figures are valid for unreinforced concrete and reinforced concrete with a rebar spacing s ≥ 15 cm (any diameter) or with a rebar spacing s ≥ 10 cm, if the rebar diameter is 10mm or smaller.
2. The figures for shear are based on a single anchor without influence of concrete edges. For anchorages close to edges (c ≤ max [10 hef; 60d]) the concrete edge failure shall be checked per ETAG 001, Annex C, design method A.
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Design resistance – Shear – VRd [kN] – hef = 12d – Carbon steel 5.8

Modelo	Design resistance – h_{ef} = 12d – Carbon steel 5.8							
	Shear - V_{Rd} [kN]							
	Cracked concrete				Non-cracked concrete			
	C20/25	C30/37	C40/50	C50/60	C20/25	C30/37	C40/50	C50/60
AT-HP PLUS + LMAS M8	-	-	-	-	7.2	7.2	7.2	7.2
AT-HP PLUS + LMAS M10	-	-	-	-	12	12	12	12
AT-HP PLUS + LMAS M12	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8
AT-HP PLUS + LMAS M16	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2
AT-HP PLUS + LMAS M20	-	-	-	-	48.8	48.8	48.8	48.8
AT-HP PLUS + LMAS M24	-	-	-	-	70.4	70.4	70.4	70.4

Concrete :

AT-HP PLUS - RESINA PARA MúLTIPLES MATERIALES CON INDICADOR DE MONTAJE

1. The design loads have been calculated using the partial safety factors for resistances stated in ETA-approval(s). The loading figures are valid for unreinforced concrete and reinforced concrete with a rebar spacing s ≥ 15 cm (any diameter) or with a rebar spacing s ≥ 10 cm, if the rebar diameter is 10mm or smaller.
2. The figures for shear are based on a single anchor without influence of concrete edges. For anchorages close to edges (c ≤ max [10 hef; 60d]) the concrete edge failure shall be checked per ETAG 001, Annex C, design method A.
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Design resistance – Shear – VRd [kN] – hef = 8d – Stainless steel A4-70

Modelo	Design resistance – h_{ef} = 8d – Stainless steel A4-70							
	Shear - V_{Rd} [kN]							
	Cracked concrete				Non-cracked concrete			
	C20/25	C30/37	C40/50	C50/60	C20/25	C30/37	C40/50	C50/60
AT-HP PLUS + LMAS M8	-	-	-	-	8.3	8.3	8.3	8.3
AT-HP PLUS + LMAS M10	-	-	-	-	12.8	12.8	12.8	12.8
AT-HP PLUS + LMAS M12	16.9	17.6	18.1	18.4	19.2	19.2	19.2	19.2
AT-HP PLUS + LMAS M16	30	31.2	32.1	32.7	35.3	35.3	35.3	35.3
AT-HP PLUS + LMAS M20	-	-	-	-	55.1	55.1	55.1	55.1
AT-HP PLUS + LMAS M24	-	-	-	-	79.5	79.5	79.5	79.5

Concrete :

1. The design loads have been calculated using the partial safety factors for resistances stated in ETA-approval(s). The loading figures are valid for unreinforced concrete and reinforced concrete with a rebar spacing s ≥ 15 cm (any diameter) or with a rebar spacing s ≥ 10 cm, if the rebar diameter is 10mm or smaller.
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Design resistance – Shear – VRd [kN] – hef = 12d – Stainless steel A4-70

Modelo	Design resistance – h_{ef} = 12d – Stainless steel A4-70							
	Shear - V_{Rd} [kN]							
	Cracked concrete				Non-cracked concrete			
	C20/25	C30/37	C40/50	C50/60	C20/25	C30/37	C40/50	C50/60
AT-HP PLUS + LMAS M8	-	-	-	-	8.3	8.3	8.3	8.3
AT-HP PLUS + LMAS M10	-	-	-	-	12.8	12.8	12.8	12.8
AT-HP PLUS + LMAS M12	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2
AT-HP PLUS + LMAS M16	35.3	35.3	35.3	35.3	35.3	35.3	35.3	35.3
AT-HP PLUS + LMAS M20	-	-	-	-	55.1	55.1	55.1	55.1
AT-HP PLUS + LMAS M24	-	-	-	-	79.5	79.5	79.5	79.5

Concrete :

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2. The figures for shear are based on a single anchor without influence of concrete edges. For anchorages close to edges (c ≤ max [10 hef; 60d]) the concrete edge failure shall be checked per ETAG 001, Annex C, design method A.
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Design resistance – Bending moment – MRd [Nm] – Concrete

Modelo	Design resistance – Bending moment – M_{Rd} [Nm]	
	Carbon steel 5.8	Stainless steel A4-70
AT-HP PLUS + LMAS M8	15.2	16.7
AT-HP PLUS + LMAS M10	29.6	34
AT-HP PLUS + LMAS M12	52.8	59
AT-HP PLUS + LMAS M16	133.6	149.4
AT-HP PLUS + LMAS M20	260.8	291
AT-HP PLUS + LMAS M24	448.8	502.6

Concrete :
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2. The figures for shear are based on a single anchor without influence of concrete edges. For anchorages close to edges (c ≤ max [10 hef; 60d]) the concrete edge failure shall be checked per ETAG 001, Annex C, design method A.
3. Concrete is considered non-cracked when the tensile stress within the concrete is\sigmaL +\sigmaR ≤ 0. In the absence of detailed verification \sigmaR = 3 N/mm² can be assumed (\sigmaL equals the tensile stress within the concrete induced by external loads, anchors loads included).

Design resistance – Tension – NRd [kN] – Rebar

Modelo	Design resistance – N_{Rd} – Carbon steel 5.8 [kN]							
	Non-cracked concrete							
	h_{ef} = 8d				h_{ef} = 12d			
	C20/25	C30/37	C40/50	C50/60	C20/25	C30/37	C40/50	C50/60
AT-HP PLUS + Ø8	6.3	7	7.7	8.1	9.4	10.5	11.5	12.2
AT-HP PLUS + Ø10	10.5	11.7	12.9	13.6	15.7	17.6	19.3	20.4
AT-HP PLUS + Ø12	14.1	15.8	17.3	18.3	21.1	23.6	26	27.4
AT-HP PLUS + Ø14	19.1	21.4	23.6	24.9	28.7	32.2	35.3	37.3
AT-HP PLUS + Ø16	23.2	26	28.6	34.8	34.8	39	42.8	52.2
AT-HP PLUS + Ø20	36.3	40.6	44.6	47.2	54.4	61	66.9	70.8
AT-HP PLUS + Ø25	52.3	58.6	64.4	68	78.5	87.9	96.6	102.1

Design resistance – Shear – VRd [kN] – Rebar

Modelo	Design resistance – V_{Rd} – Carbon steel 5.8 [kN]							
	Non-cracked concrete							
	h_{ef} = 8d				h_{ef} = 12d			
	C20/25	C30/37	C40/50	C50/60	C20/25	C30/37	C40/50	C50/60
AT-HP PLUS + Ø8	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3

Modelo	Design resistance – V_{Rd} – Carbon steel 5.8 [kN]							
	Non-cracked concrete							
	h_{ef} = 8d				h_{ef} = 12d			
	C20/25	C30/37	C40/50	C50/60	C20/25	C30/37	C40/50	C50/60
AT-HP PLUS + Ø10	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
AT-HP PLUS + Ø12	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7
AT-HP PLUS + Ø14	28	28	28	28	28	28	28	28
AT-HP PLUS + Ø16	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7
AT-HP PLUS + Ø20	57.3	57.3	57.3	57.3	57.3	57.3	57.3	57.3
AT-HP PLUS + Ø25	90	90	90	90	90	90	90	90

Design resistance – Bending moment – MRd [Nm] – Rebar

Modelo	Design resistance – Bending moment – M_{Rd} [Nm]
AT-HP PLUS + Ø8	22
AT-HP PLUS + Ø10	43.3
AT-HP PLUS + Ø12	74.7
AT-HP PLUS + Ø14	118.7
AT-HP PLUS + Ø16	176.7
AT-HP PLUS + Ø20	345.3
AT-HP PLUS + Ø25	674.7

ZAC des Quatre Chemins - 85400 Sainte Gemme la Plaine - France
tél : +33 2 51 28 44 00 / fax : +33 2 51 28 44 01

Noticia Técnica

AT-HP PLUS - RESINA PARA MúLTIPLES MATERIALES CON INDICADOR DE MONTAJE

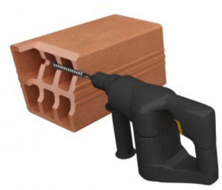
INSTALACIóN

Tiempos de montaje

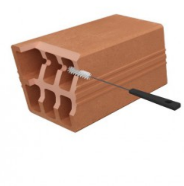
Temperatura [°C]	-5°C	0°C	5°C	10°C	20°C	30°C
Tiempo de curado	45min	15min	12min	9min	4min	1min
Tiempo hasta la solicitación	9h	4h	1h30	60min	30min	20min

Méthodes de perçage

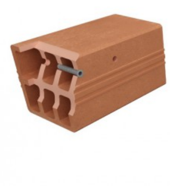
Brique pleine/Béton	perçage à percussion
Brique creuse	perçage rotatif
Béton cellulaire	perçage à percussion



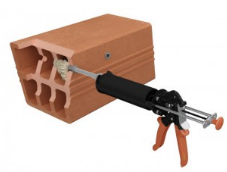
Perfore.



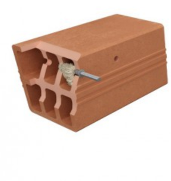
Cepille.



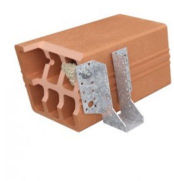
Introduzca un tamiz.



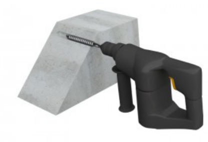
Llene el orificio desde el fondo hacia el exterior, inyectando con la boquilla una dosis de producto en cada movimiento.



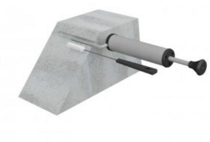
Inserte la varilla girándola lentamente.



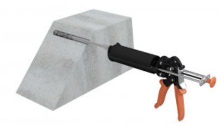
Fije el anclaje una vez haya transcurrido el tiempo de solicitación.



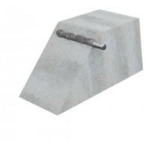
Perfore.



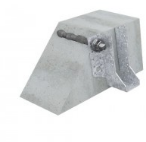
Limpie el orificio con un cepillo e insuflando aire, según lo especificado en el cartucho.



Llene entre 1/2 y 2/3 del orificio desde el fondo hacia el exterior, inyectando cada vez una dosis de producto con la boquilla.



Introduzca la varilla LMAS, girándola lentamente de izquierda a derecha. Ajústela.



Fije el anclaje una vez haya transcurrido el tiempo de solicitación.

Installation parameters – Concrete

Modelo	Installation parameters - Concrete					
	Ø drilling [d_0] [mm]	Max. fixture hole Ø [d_f] [mm]	Drilling depth (8d) [$h_0=h_{ef}=8d$] [mm]	Drilling depth (12d) [$h_0=h_{ef}=12d$] [mm]	Wrench size [SW]	Installation torque [T_{inst}] [Nm]
AT-HP PLUS + LMAS M8	10	9	64	96	13	10

SIMPSON Strong-Tie

Modelo	Installation parameters - Concrete					
	Ø drilling [d_0] [mm]	Max. fixture hole Ø [d_f] [mm]	Drilling depth (8d) [h_0=h_{ef}=8d] [mm]	Drilling depth (12d) [h_0=h_{ef}=12d] [mm]	Wrench size [SW]	Installation torque [T_{inst}] [Nm]
AT-HP PLUS + LMAS M10	12	12	80	120	17	20
AT-HP PLUS + LMAS M12	14	14	96	144	19	30
AT-HP PLUS + LMAS M16	18	18	128	192	24	60
AT-HP PLUS + LMAS M20	24	22	160	240	30	90
AT-HP PLUS + LMAS M24	28	26	192	288	36	140

Spacing, edge distances and member thickness – Concrete

Modelo	Spacing, edge distance and member thickness - Concrete									
	Effective embedment depth (8d) [$h_{ef,8d}$] [mm]	Characteristic spacing for $h_{ef,8d}$ [$S_{cr,N}$] [mm]	Characteristic edge distance for $h_{ef,8d}$ [$c_{cr,N}$] [mm]	Min. member thickness for $h_{ef,8d}$ [h_{min}] [mm]	Effective embedment depth (12d) [$h_{ef,12d}$] [mm]	Characteristic spacing for $h_{ef,12d}$ [$S_{cr,N}$] [mm]	Characteristic edge distance for $h_{ef,12d}$ [$c_{cr,N}$] [mm]	Min. member thickness for $h_{ef,12d}$ [h_{min}] [mm]	Min. spacing [S_{min}] [mm]	Min. edge distance [C_{min}] [mm]
AT-HP PLUS + LMAS M8	64	192	96	100	96	288	144	100	40	40
AT-HP PLUS + LMAS M10	80	240	120	110	120	360	180	150	50	50
AT-HP PLUS + LMAS M12	96	288	144	126	144	432	216	174	60	60
AT-HP PLUS + LMAS M16	128	384	192	158	192	576	288	222	80	80
AT-HP PLUS + LMAS M20	160	480	240	190	240	720	360	270	100	100
AT-HP PLUS + LMAS M24	192	576	288	222	288	864	432	318	120	120

Installation parameters – Rebar

Modelo	Installation parameters - Rebar		
	Ø drilling [d_0] [mm]	Drilling depth (8d) [h_0=h_{ef}=8d] [mm]	Drilling depth (12d) [h_0=h_{ef}=12d] [mm]
AT-HP PLUS + Ø8	12	64	96
AT-HP PLUS + Ø10	14	80	120
AT-HP PLUS + Ø12	16	96	144
AT-HP PLUS + Ø14	18	112	168
AT-HP PLUS + Ø16	20	128	192
AT-HP PLUS + Ø20	25	160	240
AT-HP PLUS + Ø25	32	200	300

Spacing, edge distances and member thickness – Rebar

Modelo	Spacing, edge distance and member thickness - Rebar									
	Effective embedment depth (8d) [$h_{ef,8d}$] [mm]	Characteristic spacing for $h_{ef,8d}$ [$S_{cr,N}$] [mm]	Characteristic edge distance for $h_{ef,8d}$ [$c_{cr,N}$] [mm]	Min. member thickness for $h_{ef,8d}$ [h_{min}] [mm]	Effective embedment depth (12d) [$h_{ef,12d}$] [mm]	Characteristic spacing for $h_{ef,12d}$ [$S_{cr,N}$] [mm]	Characteristic edge distance for $h_{ef,12d}$ [$c_{cr,N}$] [mm]	Min. member thickness for $h_{ef,12d}$ [h_{min}] [mm]	Min. spacing [S_{min}] [mm]	Min. edge distance [C_{min}] [mm]
AT-HP PLUS + Ø8	64	192	96	100	96	288	144	100	40	40
AT-HP PLUS + Ø10	80	240	120	110	120	360	180	150	50	50
AT-HP PLUS + Ø12	96	288	144	126	144	432	216	174	60	60
AT-HP PLUS + Ø14	112	336	168	148	168	504	252	204	70	70
AT-HP PLUS + Ø16	128	384	192	168	192	576	288	232	80	80
AT-HP PLUS + Ø20	160	480	240	210	240	720	360	290	100	100
AT-HP PLUS + Ø25	200	600	300	264	300	900	450	364	125	125