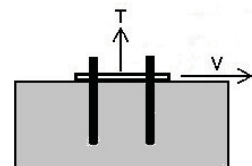
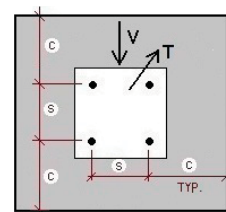


Table 1A: SET-XP with Four Anchors, Four Edge Distances, Non-Cracked Concrete (T, V) ⁸

Design Resistance Values for TENSION and SHEAR ^{1, 2, 3, 4, 5, 6, 7}

Insert Diameter (d) = 12 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 110 mm		45		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 140 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	80	5.4	8.1	7.1	9.3	8.7	10.3	10.5	11.3	12.4	12.3	14.1	14.3
	100	6.9	10.3	8.8	11.6	10.4	12.6	12.2	13.7	14.2	14.8	18.5	16.9
	150	11.2	15.7	13.3	17.1	15.1	18.2	17.1	19.3	19.1	20.5	23.6	22.7
	200	16.2	19.2	18.5	20.5	20.5	21.6	22.6	22.7	24.8	23.7	29.5	25.9
Insert Diameter (d) = 16 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 140 mm		60		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 176 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	100	7.8	12.2	8.8	12.9	10.4	14.1	12.2	15.3	14.2	16.4	18.5	18.8
	125	9.9	15.4	10.9	16.2	12.7	17.4	14.6	18.7	16.6	19.9	21.0	22.4
	150	12.2	18.8	13.3	19.5	15.1	20.8	17.1	22.1	19.1	23.4	23.6	26.0
	200	17.3	24.4	18.5	25.2	20.5	26.5	22.6	27.8	24.8	29.2	29.5	31.8
Insert Diameter (d) = 20 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 180 mm		70		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 228 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	115	9.7	16.2	11.8	17.8	13.6	19.2	15.6	20.5	20.0	23.2	23.3	25.9
	150	12.9	21.4	15.1	23.1	17.1	24.5	19.1	26.0	23.6	28.9	28.6	31.8
	200	18.1	29.2	20.5	31.0	22.6	32.6	24.8	34.1	29.5	37.2	34.6	40.3
	250	23.8	35.9	26.3	37.8	28.6	39.4	30.9	41.0	35.9	44.1	41.2	47.3
Insert Diameter (d) = 24 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 220 mm		80		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 276 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	135	12.2	21.5	13.6	22.7	15.5	24.2	17.6	25.7	22.0	28.8	26.9	31.9
	150	13.6	23.9	15.1	25.1	17.1	26.7	19.1	28.3	23.6	31.4	28.6	34.5
	200	18.9	32.4	20.5	33.6	22.6	35.3	24.8	37.0	29.5	40.4	34.6	43.7
	300	30.9	48.9	32.7	50.3	35.1	52.1	37.6	53.9	42.8	57.5	48.3	61.1
Insert Diameter (d) = 27 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 240 mm		90		125		150		200		250		300	
Min. Concrete Thickness (h _{min}) = 300 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	155	14.9	26.5	17.6	28.8	19.7	30.5	24.2	33.8	29.1	37.1	34.6	40.4
	200	19.6	34.5	22.6	36.9	24.8	38.7	29.5	42.2	34.6	45.7	40.1	49.2
	250	25.5	43.8	28.6	46.4	30.9	48.2	35.9	52.0	41.2	55.7	46.8	59.4
	300	31.8	53.9	35.1	56.4	37.6	58.6	42.8	62.5	48.3	66.4	54.1	70.3

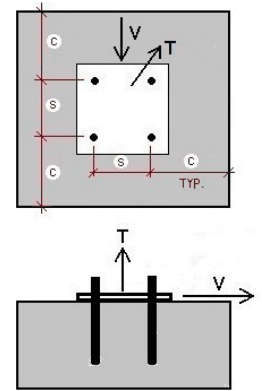


- Concrete strength is C20/25 ($f_{ck, cube} = 25$ MPa), hole condition is "dry", and exposure is temperature range 1.
- N_{Rd} value shown is based on the lesser of $N_{Rd,p}$, $N_{Rd,c}$ and $N_{Rd,sp}$. These values are good for any grade of steel used and Designer needs to check steel tension design resistance separately.
- V_{Rd} value shown is based on the lesser of $V_{Rd,c}$ and $V_{Rd,cp}$. These values are good for any grade of steel used and Designer needs to check steel shear design resistance separately.
- Reference "Anchor Design Methodology" on page 10 for the descriptions of N_{Rd} and V_{Rd}
- Concrete is considered un-reinforced, and therefore concrete splitting and spalling is not controlled. If reinforcement is present and can be verified per ETAG TR 029 requirements, then Designer should re-evaluate the design resistances using Simpson Strong-Tie® Anchor Designer™ Software as the design values may increase significantly.
- All design resistances are derived from the product's characteristic values and safety factors published in the ETA.
- Concrete edge Distance "c" is measured from edge of concrete to centerline of the bolt(s). Anchor Spacing "s" is measured from centerline of bolt(s) to centerline of bolt(s).
- Concrete is considered non-cracked when the tensile stress within the concrete is $\sigma_L + \sigma_R \leq 0$. In the absence of detailed verification $\sigma_R = 3$ N/mm² can be assumed (σ_L equals the tensile stress within the concrete induced by external loads, anchors loads included).

Table 1B: SET-XP with Four Anchors, Four Edge Distances, Cracked Concrete (T, V) ⁸

Design Resistance Values for TENSION and SHEAR ^{1, 2, 3, 4, 5, 6, 7}

Insert Diameter (d) = 12 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 110 mm		45		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 140 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	80	3.9	5.8	5.1	6.6	6.2	7.3	7.5	8.0	8.9	8.7	10.1	10.1
	100	5.0	7.3	6.2	8.2	7.4	9.0	8.7	9.7	10.1	10.5	13.2	11.9
	150	8.0	11.1	9.5	12.1	10.8	12.9	12.2	13.7	13.6	14.5	16.8	16.1
	200	11.6	13.6	13.2	14.5	14.6	15.3	16.1	16.1	17.6	16.8	21.0	18.3
Insert Diameter (d) = 16 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 140 mm		60		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 176 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	100	5.6	8.6	6.2	9.1	7.4	10.0	8.7	10.8	10.1	11.6	13.2	13.3
	125	7.1	10.9	7.8	11.5	9.0	12.3	10.4	13.2	11.8	14.1	14.9	15.9
	150	8.7	13.3	9.5	13.8	10.8	14.8	12.2	15.7	13.6	16.6	16.8	18.4
	200	12.3	17.3	13.2	17.8	14.6	18.8	16.1	19.7	17.6	20.7	21.0	22.5
Insert Diameter (d) = 20 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 180 mm		70		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 228 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	115	6.9	11.5	8.4	12.6	9.7	13.6	11.1	14.5	14.2	16.4	16.6	18.4
	150	9.2	15.1	10.8	16.4	12.2	17.4	13.6	18.4	16.8	20.5	20.4	22.5
	200	12.9	20.7	14.6	22.0	16.1	23.1	17.6	24.2	21.0	26.4	24.6	28.6
	250	17.0	25.5	18.8	26.8	20.4	27.9	22.0	29.0	25.6	31.3	29.3	33.5
Insert Diameter (d) = 24 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 220 mm		80		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 276 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	135	8.7	15.2	9.7	16.1	11.1	17.2	12.5	18.2	15.7	20.4	19.2	22.6
	150	9.7	16.9	10.8	17.8	12.2	18.9	13.6	20.0	16.8	22.2	20.4	24.5
	200	13.4	22.9	14.6	23.8	16.1	25.0	17.6	26.2	21.0	28.6	24.6	31.0
	300	22.0	34.6	23.3	35.6	25.0	36.9	26.8	38.2	30.5	40.7	34.4	43.3
Insert Diameter (d) = 27 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 240 mm		90		125		150		200		250		300	
Min. Concrete Thickness (h _{min}) = 300 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	155	10.6	18.8	12.5	20.4	14.0	21.6	17.2	23.9	20.8	26.3	24.7	28.6
	200	14.0	24.4	16.1	26.2	17.6	27.4	21.0	29.9	24.6	32.4	28.6	34.9
	250	18.2	31.0	20.4	32.9	22.0	34.2	25.6	36.8	29.3	39.4	33.4	42.1
	300	22.7	38.2	25.0	40.1	26.8	41.5	30.5	44.3	34.4	47.0	38.6	49.8

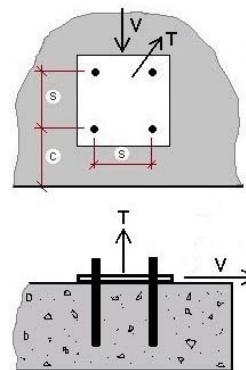


- Concrete strength is C20/25 ($f_{ck, cube} = 25$ MPa), hole condition is "dry", and exposure is temperature range 1.
- N_{Rd} value shown is based on the lesser of $N_{Rd,p}$, $N_{Rd,c}$ and $N_{Rd,sp}$. These values are good for any grade of steel used and Designer needs to check steel tension design resistance separately.
- V_{Rd} value shown is based on the lesser of $V_{Rd,c}$ and $V_{Rd,cp}$. These values are good for any grade of steel used and Designer needs to check steel shear design resistance separately.
- Reference "Anchor Design Methodology" on page 10 for the descriptions of N_{Rd} and V_{Rd}
- Concrete is considered un-reinforced, and therefore concrete splitting and spalling is not controlled. If reinforcement is present and can be verified per ETAG TR 029 requirements, then Designer should re-evaluate the design resistances using Simpson Strong-Tie® Anchor Designer™ Software as the design values may increase significantly.
- All design resistances are derived from the product's characteristic values and safety factors published in the ETA.
- Concrete edge Distance "c" is measured from edge of concrete to centerline of the bolt(s). Anchor Spacing "s" is measured from centerline of bolt(s) to centerline of bolt(s).
- Concrete is considered non-cracked when the tensile stress within the concrete is $\sigma_L + \sigma_R \leq 0$. In the absence of detailed verification $\sigma_R = 3$ N/mm² can be assumed (σ_L equals the tensile stress within the concrete induced by external loads, anchors loads included).

Table 2A: SET-XP with Four Anchors, One Edge Distance, Non-Cracked Concrete (T, V T) ⁸

Design Resistance Values for TENSION and SHEAR ^{1, 2, 3, 4, 5, 6, 7}

Insert Diameter (d) = 12 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 110 mm		45		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 140 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	80	15.8	12.6	17.5	13.9	19.1	15.0	20.7	16.1	22.3	17.2	25.8	19.4
	100	16.9	15.7	18.7	17.1	20.3	18.2	22.0	19.3	23.7	20.5	27.3	22.7
	150	19.7	21.0	21.7	22.2	23.5	23.3	25.3	24.3	27.2	25.4	31.2	27.5
	200	22.8	26.1	25.0	27.3	26.9	28.3	28.9	29.4	30.9	30.4	35.3	32.4
Insert Diameter (d) = 16 mm		Spacing (s)											
Effective Embedment (h _{ef}) = 140 mm		60		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 176 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	100	22.7	18.8	23.7	19.6	25.4	20.9	27.1	22.2	28.9	23.5	32.6	26.1
	125	24.3	23.4	25.3	24.2	27.0	25.5	28.8	26.9	30.7	28.2	34.5	30.9
	150	25.8	26.4	26.9	27.2	28.7	28.5	30.6	29.8	32.5	31.1	36.5	33.7
	200	29.1	32.4	30.3	33.1	32.2	34.4	34.2	35.6	36.3	36.8	40.6	39.3
Insert Diameter (d) = 20 mm		Spacing (s)											
Effective Embedment (h _{ef}) = 180 mm		70		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 228 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	115	31.7	24.9	33.9	26.7	35.8	28.2	37.7	29.7	41.6	32.7	45.8	35.7
	150	34.1	33.4	36.4	35.3	38.3	36.9	40.3	38.5	44.4	41.7	48.8	44.9
	200	37.6	40.6	40.0	42.4	42.1	44.0	44.2	45.5	48.6	48.5	53.3	51.5
	250	41.3	47.6	43.9	49.3	46.1	50.7	48.3	52.2	52.9	55.1	57.8	58.0
Insert Diameter (d) = 24 mm		Spacing (s)											
Effective Embedment (h _{ef}) = 220 mm		80		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 276 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	135	42.0	33.0	43.6	34.4	45.6	36.1	47.6	37.8	51.9	41.2	56.3	44.6
	150	43.1	37.0	44.7	38.4	46.7	40.1	48.8	41.9	53.1	45.3	57.6	48.8
	200	46.9	48.9	48.6	50.3	50.7	52.1	52.9	53.9	57.4	57.5	62.1	61.1
	300	54.8	64.4	56.7	65.8	59.1	67.4	61.5	69.0	66.4	72.3	71.6	75.6
Insert Diameter (d) = 27 mm		Spacing (s)											
Effective Embedment (h _{ef}) = 240 mm		90		125		150		200		250		300	
Min. Concrete Thickness (h _{min}) = 300 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	155	48.7	40.9	51.6	43.4	53.7	45.3	58.1	49.0	62.7	52.7	67.4	56.3
	200	52.2	53.9	55.2	56.6	57.5	58.6	62.0	62.5	66.8	66.4	71.7	70.3
	250	56.2	62.2	59.4	64.8	61.8	66.6	66.5	70.3	71.5	74.0	76.6	77.7
	300	60.4	70.3	63.7	72.8	66.2	74.6	71.2	78.2	76.4	81.7	81.7	85.3

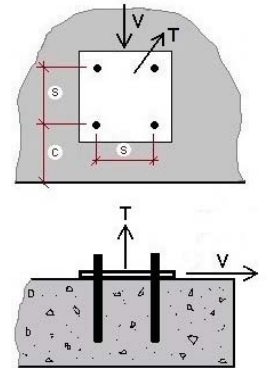


- Concrete strength is C20/25 ($f_{ck, cube} = 25$ MPa), hole condition is "dry", and exposure is temperature range 1.
- N_{Rd} value shown is based on the lesser of $N_{Rd,p}$, $N_{Rd,c}$ and $N_{Rd,sp}$. These values are good for any grade of steel used and Designer needs to check steel tension design resistance separately.
- V_{Rd} value shown is based on the lesser of $V_{Rd,c}$ and $V_{Rd,cp}$. These values are good for any grade of steel used and Designer needs to check steel shear design resistance separately.
- Reference "Anchor Design Methodology" on page 10 for the descriptions of N_{Rd} and V_{Rd}
- Concrete is considered un-reinforced, and therefore concrete splitting and spalling is not controlled. If reinforcement is present and can be verified per ETAG TR 029 requirements, then Designer should re-evaluate the design resistances using Simpson Strong-Tie® Anchor Designer™ Software as the design values may increase significantly.
- All design resistances are derived from the product's characteristic values and safety factors published in the ETA.
- Concrete edge Distance "c" is measured from edge of concrete to centerline of the bolt(s). Anchor Spacing "s" is measured from centerline of bolt(s) to centerline of bolt(s).
- Concrete is considered non-cracked when the tensile stress within the concrete is $\sigma_L + \sigma_R \leq 0$. In the absence of detailed verification $\sigma_R = 3$ N/mm² can be assumed (σ_L equals the tensile stress within the concrete induced by external loads, anchors loads included).

Table 2B: SET-XP with Four Anchors, One Edge Distance, Cracked Concrete (T, V F) ⁸

Design Resistance Values for TENSION and SHEAR ^{1, 2, 3, 4, 5, 6, 7}

Insert Diameter (d) = 12 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 110 mm		45		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 140 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	80	11.3	8.9	12.5	9.8	13.6	10.6	14.7	11.4	15.9	12.2	18.4	13.7
	100	12.0	11.1	13.3	12.1	14.5	12.9	15.6	13.7	16.9	14.5	19.5	16.1
	150	14.1	14.8	15.5	15.7	16.7	16.5	18.0	17.2	19.4	18.0	22.2	19.5
	200	16.2	18.5	17.8	19.4	19.2	20.1	20.6	20.8	22.1	21.5	25.1	22.9
Insert Diameter (d) = 16 mm		Spacing (s)											
Effective Embedment (h _{ef}) = 140 mm		60		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 176 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	100	16.2	13.3	16.9	13.9	18.1	14.8	19.3	15.7	20.6	16.6	23.3	18.5
	125	17.3	16.6	18.0	17.1	19.3	18.1	20.5	19.0	21.9	20.0	24.6	21.9
	150	18.4	18.7	19.2	19.3	20.5	20.2	21.8	21.1	23.2	22.0	26.0	23.8
	200	20.8	23.0	21.6	23.5	23.0	24.3	24.4	25.2	25.9	26.1	28.9	27.8
Insert Diameter (d) = 20 mm		Spacing (s)											
Effective Embedment (h _{ef}) = 180 mm		70		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 228 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	115	20.8	17.6	22.7	18.9	24.2	20.0	25.9	21.0	29.3	23.2	32.6	25.3
	150	23.8	23.6	25.7	25.0	27.3	26.1	28.7	27.3	31.7	29.5	34.8	31.8
	200	26.8	28.8	28.5	30.1	30.0	31.1	31.5	32.2	34.6	34.4	37.9	36.5
	250	29.5	33.7	31.3	34.9	32.8	35.9	34.4	37.0	37.7	39.0	41.2	41.1
Insert Diameter (d) = 24 mm		Spacing (s)											
Effective Embedment (h _{ef}) = 220 mm		80		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 276 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	135	29.9	23.4	31.1	24.4	32.5	25.6	34.0	26.8	37.0	29.2	40.1	31.6
	150	30.7	26.2	31.9	27.2	33.3	28.4	34.8	29.6	37.9	32.1	41.0	34.6
	200	33.4	34.6	34.6	35.6	36.1	36.9	37.7	38.2	40.9	40.7	44.3	43.3
	300	39.1	45.6	40.4	46.6	42.1	47.7	43.8	48.9	47.3	51.2	51.0	53.6
Insert Diameter (d) = 27 mm		Spacing (s)											
Effective Embedment (h _{ef}) = 240 mm		90		125		150		200		250		300	
Min. Concrete Thickness (h _{min}) = 300 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	155	34.7	29.0	36.8	30.8	38.3	32.1	41.4	34.7	44.7	37.3	48.1	39.9
	200	37.2	38.2	39.4	40.1	41.0	41.5	44.2	44.3	47.6	47.0	51.1	49.8
	250	40.1	44.0	42.4	45.9	44.0	47.2	47.4	49.8	51.0	52.4	54.6	55.0
	300	43.1	49.8	45.4	51.6	47.2	52.8	50.7	55.4	54.4	57.9	58.2	60.4

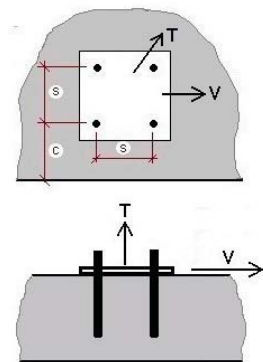


- Concrete strength is C20/25 (f_{ck, cube} = 25 MPa), hole condition is "dry", and exposure is temperature range 1.
- N_{Rd} value shown is based on the lesser of N_{Rd,p}, N_{Rd,c} and N_{Rd,sp}. These values are good for any grade of steel used and Designer needs to check steel tension design resistance separately.
- V_{Rd} value shown is based on the lesser of V_{Rd,c} and V_{Rd,cp}. These values are good for any grade of steel used and Designer needs to check steel shear design resistance separately.
- Reference "Anchor Design Methodology" on page 10 for the descriptions of N_{Rd} and V_{Rd}
- Concrete is considered un-reinforced, and therefore concrete splitting and spalling is not controlled. If reinforcement is present and can be verified per ETAG TR 029 requirements, then Designer should re-evaluate the design resistances using Simpson Strong-Tie® Anchor Designer™ Software as the design values may increase significantly.
- All design resistances are derived from the product's characteristic values and safety factors published in the ETA.
- Concrete edge Distance "c" is measured from edge of concrete to centerline of the bolt(s). Anchor Spacing "s" is measured from centerline of bolt(s) to centerline of bolt(s).
- Concrete is considered non-cracked when the tensile stress within the concrete is σ_L + σ_R ≤ 0. In the absence of detailed verification σ_R = 3 N/mm² can be assumed (σ_L equals the tensile stress within the concrete induced by external loads, anchors loads included).

Table 3A: SET-XP with Four Anchors, One Edge Distance, Non-Cracked Concrete (T, V//) ⁸

Design Resistance Values for TENSION and SHEAR ^{1, 2, 3, 4, 5, 6, 7}

Insert Diameter (d) = 12 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 110 mm		45		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 140 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	80	15.8	31.4	17.5	34.7	19.1	37.4	20.7	40.2	22.3	42.9	25.8	48.4
	100	16.9	39.2	18.7	42.6	20.3	45.5	22.0	48.3	23.7	51.2	27.3	56.8
	150	19.7	52.4	21.7	55.6	23.5	58.2	25.3	60.8	27.2	63.5	31.2	68.8
	200	22.8	65.3	25.0	68.3	26.9	70.9	28.9	73.4	30.9	75.9	35.3	81.0
Insert Diameter (d) = 16 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 140 mm		60		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 176 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	100	22.7	46.9	23.7	48.9	25.4	52.1	27.1	55.4	28.9	58.7	32.6	65.2
	125	24.3	58.5	25.3	60.5	27.0	63.8	28.8	67.2	30.7	70.6	34.5	77.3
	150	25.8	66.0	26.9	68.0	28.7	71.2	30.6	74.4	32.5	77.7	36.5	84.2
	200	29.1	81.0	30.3	82.8	32.2	85.9	34.2	89.0	36.3	92.0	40.6	98.2
Insert Diameter (d) = 20 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 180 mm		70		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 228 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	115	31.7	62.2	33.9	66.7	35.8	70.5	37.7	74.2	41.6	81.7	45.8	89.2
	150	34.1	83.4	36.4	88.2	38.3	92.2	40.3	96.2	44.4	104.3	48.8	112.3
	200	37.6	101.5	40.0	106.1	42.1	109.9	44.2	113.7	48.6	121.2	53.2	128.8
	250	41.3	118.9	43.9	123.2	46.1	126.9	48.3	130.5	52.9	137.7	57.8	145.0
Insert Diameter (d) = 24 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 220 mm		80		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 276 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	135	42.0	82.6	43.6	86.0	45.6	90.2	47.6	94.5	51.9	103.0	56.3	111.5
	150	43.1	92.4	44.7	95.9	46.7	100.3	48.8	104.6	53.1	113.3	57.6	122.1
	200	46.9	122.1	48.6	125.7	50.7	130.2	52.9	134.7	57.4	143.7	62.1	152.7
	300	54.8	161.1	56.7	164.4	59.1	168.5	61.5	172.6	66.4	180.8	71.6	189.0
Insert Diameter (d) = 27 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 240 mm		90		125		150		200		250		300	
Min. Concrete Thickness (h _{min}) = 300 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	155	48.7	102.2	51.6	108.6	53.7	113.2	58.1	122.4	62.7	131.6	67.4	140.8
	200	52.2	134.8	55.2	141.6	57.5	146.7	62.0	156.2	66.8	166.0	71.0	175.8
	250	56.2	155.4	59.4	161.9	61.8	166.5	66.5	175.8	71.5	185.0	76.6	194.3
	300	60.4	175.9	63.7	182.1	66.2	186.5	71.2	195.4	76.4	204.3	81.7	213.5

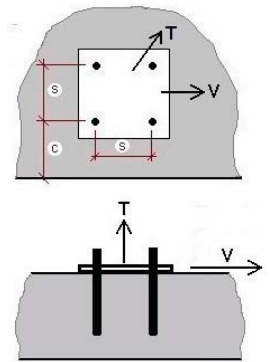


- Concrete strength is C20/25 ($f_{ck, cube} = 25$ MPa), hole condition is "dry", and exposure is temperature range 1.
- N_{Rd} value shown is based on the lesser of $N_{Rd,p}$, $N_{Rd,c}$ and $N_{Rd,sp}$. These values are good for any grade of steel used and Designer needs to check steel tension design resistance separately.
- V_{Rd} value shown is based on the lesser of $V_{Rd,c}$ and $V_{Rd,cp}$. These values are good for any grade of steel used and Designer needs to check steel shear design resistance separately.
- Reference "Anchor Design Methodology" on page 10 for the descriptions of N_{Rd} and V_{Rd}
- Concrete is considered un-reinforced, and therefore concrete splitting and spalling is not controlled. If reinforcement is present and can be verified per ETAG TR 029 requirements, then Designer should re-evaluate the design resistances using Simpson Strong-Tie® Anchor Designer™ Software as the design values may increase significantly.
- All design resistances are derived from the product's characteristic values and safety factors published in the ETA.
- Concrete edge Distance "c" is measured from edge of concrete to centerline of the bolt(s). Anchor Spacing "s" is measured from centerline of bolt(s) to centerline of bolt(s).
- Concrete is considered non-cracked when the tensile stress within the concrete is $\sigma_L + \sigma_R \leq 0$. In the absence of detailed verification $\sigma_R = 3$ N/mm² can be assumed (σ_L equals the tensile stress within the concrete induced by external loads, anchors loads included).

Table 3B: SET-XP with Four Anchors, One Edge Distance, Cracked Concrete (T, V//) ⁸

Design Resistance Values for TENSION and SHEAR ^{1, 2, 3, 4, 5, 6, 7}

Insert Diameter (d) = 12 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 110 mm		45		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 140 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	80	11.3	22.2	12.5	24.6	13.6	26.5	14.7	28.5	15.9	30.4	18.4	34.3
	100	12.0	27.8	13.3	30.2	14.5	32.2	15.6	34.2	16.9	36.2	19.5	40.3
	150	14.1	37.1	15.5	39.4	16.7	41.2	18.0	43.1	19.4	45.0	22.2	48.7
	200	16.2	46.2	17.8	48.4	19.2	50.2	20.6	52.0	22.1	53.8	25.1	57.4
Insert Diameter (d) = 16 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 140 mm		60		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 176 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	100	16.2	33.2	16.9	34.6	18.1	36.9	19.3	39.2	20.6	41.6	23.3	46.2
	125	17.3	41.4	18.0	42.8	19.3	45.2	20.5	47.6	21.9	50.0	24.6	54.7
	150	18.4	46.8	19.2	48.1	20.5	50.4	21.8	52.7	23.2	55.0	26.0	59.6
	200	20.8	57.4	21.6	58.7	23.0	60.8	24.4	63.0	25.9	65.2	28.9	69.5
Insert Diameter (d) = 20 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 180 mm		70		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 228 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	115	20.8	44.1	22.7	47.3	24.2	49.9	25.9	52.6	29.3	57.9	32.6	63.2
	150	23.8	59.1	25.7	62.5	27.3	65.3	28.7	68.2	31.7	73.9	34.8	79.5
	200	26.8	71.9	28.5	75.1	30.0	77.8	31.5	80.5	34.6	85.9	37.9	91.3
	250	29.5	84.2	31.3	87.3	32.8	89.9	34.4	92.4	37.7	97.6	41.2	102.7
Insert Diameter (d) = 24 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 220 mm		80		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 276 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	135	29.9	58.5	31.1	60.9	32.5	63.9	34.0	66.9	37.0	73.0	40.1	79.0
	150	30.7	65.5	31.9	67.9	33.3	71.0	34.8	74.1	37.9	80.3	41.0	86.5
	200	33.4	86.5	34.6	89.1	36.1	92.2	37.7	95.4	40.9	101.8	44.3	108.2
	300	39.1	114.1	40.4	116.4	42.1	119.4	43.8	122.3	47.3	128.1	51.0	133.9
Insert Diameter (d) = 27 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 240 mm		90		125		150		200		250		300	
Min. Concrete Thickness (h _{min}) = 300 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	155	34.7	72.4	36.8	76.8	38.3	80.2	41.4	86.7	44.7	93.2	48.1	99.8
	200	37.2	95.5	39.4	100.3	41.0	103.8	44.2	110.7	47.6	117.6	51.1	124.5
	250	40.1	110.1	42.4	114.7	44.0	117.9	47.4	124.5	51.0	131.0	54.6	137.6
	300	43.1	124.6	45.4	129.0	47.2	132.1	50.7	138.4	54.4	144.7	58.2	151.0

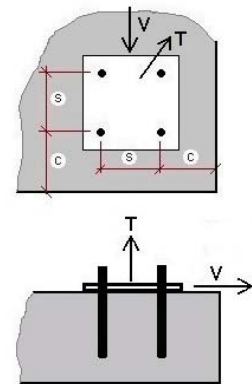


- Concrete strength is C20/25 ($f_{ck, cube} = 25$ MPa), hole condition is "dry", and exposure is temperature range 1.
- N_{Rd} value shown is based on the lesser of $N_{Rd,p}$, $N_{Rd,c}$ and $N_{Rd,sp}$. These values are good for any grade of steel used and Designer needs to check steel tension design resistance separately.
- V_{Rd} value shown is based on the lesser of $V_{Rd,c}$ and $V_{Rd,cp}$. These values are good for any grade of steel used and Designer needs to check steel shear design resistance separately.
- Reference "Anchor Design Methodology" on page 10 for the descriptions of N_{Rd} and V_{Rd}
- Concrete is considered un-reinforced, and therefore concrete splitting and spalling is not controlled. If reinforcement is present and can be verified per ETAG TR 029 requirements, then Designer should re-evaluate the design resistances using Simpson Strong-Tie® Anchor Designer™ Software as the design values may increase significantly.
- All design resistances are derived from the product's characteristic values and safety factors published in the ETA.
- Concrete edge Distance "c" is measured from edge of concrete to centerline of the bolt(s). Anchor Spacing "s" is measured from centerline of bolt(s) to centerline of bolt(s).
- Concrete is considered non-cracked when the tensile stress within the concrete is $\sigma_L + \sigma_R \leq 0$. In the absence of detailed verification $\sigma_R = 3$ N/mm² can be assumed (σ_L equals the tensile stress within the concrete induced by external loads, anchors loads included).

Table 4A: SET-XP with Four Anchors, Corner, Non-Cracked Concrete (T, V) ⁸

Design Resistance Values for TENSION and SHEAR ^{1, 2, 3, 4, 5, 6, 7}

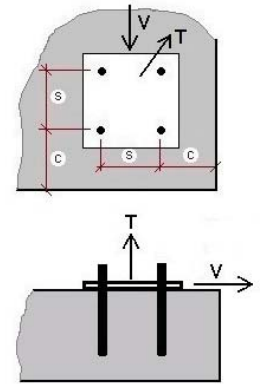
Insert Diameter (d) = 12 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 110 mm		45		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 140 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	80	10.2	9.7	11.6	10.9	12.8	11.9	14.1	12.9	15.4	13.9	18.3	15.9
	100	11.4	12.1	12.9	13.3	14.2	14.3	15.5	15.4	17.0	16.4	20.0	18.4
	150	14.7	16.0	16.4	17.1	17.9	18.1	19.5	19.1	21.1	20.0	24.6	21.9
	200	18.6	19.9	20.6	21.0	22.3	21.9	24.1	22.8	26.0	23.7	29.9	25.5
Insert Diameter (d) = 16 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 140 mm		60		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 176 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	100	14.7	14.6	15.4	15.3	16.7	16.4	18.1	17.6	19.6	18.8	22.6	21.1
	125	16.3	18.0	17.1	18.8	18.5	20.0	20.0	21.2	21.5	22.4	24.8	24.8
	150	18.1	20.3	19.0	21.0	20.5	22.1	22.0	23.3	23.6	24.5	27.0	26.8
	200	22.0	24.7	23.0	25.4	24.7	26.5	26.4	27.6	28.2	28.7	32.0	30.9
Insert Diameter (d) = 20 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 180 mm		70		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 228 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	115	20.0	19.3	21.7	20.9	23.1	22.3	24.7	23.6	27.8	26.3	31.2	29.0
	150	22.5	25.7	24.3	27.4	25.9	28.9	27.5	30.3	30.9	33.2	34.5	36.1
	200	26.5	31.1	28.5	32.7	30.2	34.1	32.0	35.5	35.7	38.2	39.6	40.9
	250	30.9	36.3	33.1	37.8	35.0	39.2	36.9	40.5	40.9	43.1	45.2	45.7
Insert Diameter (d) = 24 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 220 mm		80		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 276 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	135	26.3	25.6	27.5	26.8	29.0	28.4	30.6	29.9	34.0	32.9	37.4	36.0
	150	27.2	28.6	28.7	29.8	30.2	31.4	31.9	33.0	35.3	36.1	38.9	39.2
	200	31.5	37.5	32.8	38.8	34.6	40.4	36.3	42.0	40.0	45.3	43.9	48.5
	300	40.7	49.1	42.3	50.3	44.3	51.8	46.4	53.3	50.7	56.2	55.2	59.2
Insert Diameter (d) = 27 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 240 mm		90		125		150		200		250		300	
Min. Concrete Thickness (h _{min}) = 300 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	155	30.7	31.6	33.0	34.0	34.6	35.6	38.1	38.9	41.7	42.3	45.5	45.6
	200	34.5	41.5	36.9	43.9	38.7	45.7	42.4	49.2	46.2	52.7	50.3	56.3
	250	39.0	47.6	41.6	50.0	43.5	51.6	47.5	55.0	51.6	58.3	55.9	61.6
	300	43.8	53.7	46.6	56.0	48.7	57.6	53.0	60.8	57.4	63.9	62.0	67.1



- Concrete strength is C20/25 ($f_{ck, cube} = 25$ MPa), hole condition is "dry", and exposure is temperature range 1.
- N_{Rd} value shown is based on the lesser of $N_{Rd,p}$, $N_{Rd,c}$ and $N_{Rd,sp}$. These values are good for any grade of steel used and Designer needs to check steel tension design resistance separately.
- V_{Rd} value shown is based on the lesser of $V_{Rd,c}$ and $V_{Rd,cp}$. These values are good for any grade of steel used and Designer needs to check steel shear design resistance separately.
- Reference "Anchor Design Methodology" on page 10 for the descriptions of N_{Rd} and V_{Rd}
- Concrete is considered un-reinforced, and therefore concrete splitting and spalling is not controlled. If reinforcement is present and can be verified per ETAG TR 029 requirements, then Designer should re-evaluate the design resistances using Simpson Strong-Tie® Anchor Designer™ Software as the design values may increase significantly.
- All design resistances are derived from the product's characteristic values and safety factors published in the ETA.
- Concrete edge Distance "c" is measured from edge of concrete to centerline of the bolt(s). Anchor Spacing "s" is measured from centerline of bolt(s) to centerline of bolt(s).
- Concrete is considered non-cracked when the tensile stress within the concrete is $\sigma_L + \sigma_R \leq 0$. In the absence of detailed verification $\sigma_R = 3$ N/mm² can be assumed (σ_L equals the tensile stress within the concrete induced by external loads, anchors loads included).

Table 4B: SET-XP with Four Anchors, Corner, Cracked Concrete (T, VF)⁸

Design Resistance Values for TENSION and SHEAR ^{1, 2, 3, 4, 5, 6, 7}													
Insert Diameter (d) = 12 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 110 mm		45		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 140 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	80	7.3	6.9	8.3	7.7	9.1	8.4	10.0	9.1	11.0	9.8	13.1	11.2
	100	8.1	8.6	9.2	9.4	10.1	10.2	11.1	10.9	12.1	11.6	14.3	13.1
	150	10.5	11.3	11.7	12.1	12.8	12.8	13.9	13.5	15.1	14.2	17.6	15.5
	200	13.2	14.1	14.7	14.8	15.9	15.5	17.2	16.1	18.5	16.8	21.3	18.1
Insert Diameter (d) = 16 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 140 mm		60		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 176 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	100	10.4	10.3	11.0	10.8	11.9	11.6	12.9	12.5	13.9	13.3	16.1	15.0
	125	11.6	12.8	12.2	13.3	13.2	14.1	14.3	15.0	15.3	15.9	17.6	17.6
	150	12.9	14.4	13.5	14.9	14.6	15.7	15.7	16.5	16.8	17.3	19.3	19.0
	200	15.7	17.5	16.4	18.0	17.6	18.8	18.8	19.6	20.1	20.3	22.8	21.9
Insert Diameter (d) = 20 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 180 mm		70		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 228 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	115	14.3	13.7	15.5	14.8	16.5	15.8	17.6	16.7	19.8	18.6	22.2	20.6
	150	16.1	18.2	17.4	19.4	18.5	20.5	19.6	21.5	22.0	23.5	24.6	25.6
	200	18.9	22.0	20.3	23.2	21.5	24.2	22.8	25.1	25.4	27.1	28.2	29.0
	250	22.0	25.7	23.6	26.8	24.9	27.7	26.3	28.7	29.2	30.5	32.2	32.4
Insert Diameter (d) = 24 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 220 mm		80		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 276 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	135	18.7	18.1	19.6	19.0	20.7	20.1	21.8	21.2	24.2	23.3	26.7	25.5
	150	19.5	20.2	20.4	21.1	21.6	22.2	22.7	23.3	25.2	25.6	27.7	27.8
	200	22.4	26.6	23.4	27.5	24.6	28.6	25.9	29.8	28.5	32.1	31.3	34.4
	300	29.0	34.8	30.2	35.6	31.6	36.7	33.1	37.7	36.1	39.8	39.3	41.9
Insert Diameter (d) = 27 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 240 mm		90		125		150		200		250		300	
Min. Concrete Thickness (h _{min}) = 300 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	155	21.9	22.4	23.5	24.1	24.7	25.2	27.2	27.6	29.7	29.9	32.5	32.3
	200	24.6	29.4	26.3	31.1	27.6	32.4	30.2	34.9	33.0	37.4	35.8	39.8
	250	27.8	33.7	29.6	35.4	31.0	36.6	33.8	38.9	36.8	41.3	39.9	43.6
	300	31.2	38.1	33.3	39.6	34.7	40.8	37.7	43.0	40.9	45.3	44.2	47.6

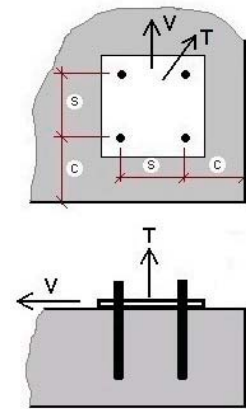


- Concrete strength is C20/25 ($f_{ck, cube} = 25$ MPa), hole condition is "dry", and exposure is temperature range 1.
- N_{Rd} value shown is based on the lesser of $N_{Rd,p}$, $N_{Rd,c}$ and $N_{Rd,sp}$. These values are good for any grade of steel used and Designer needs to check steel tension design resistance separately.
- V_{Rd} value shown is based on the lesser of $V_{Rd,c}$ and $V_{Rd,cp}$. These values are good for any grade of steel used and Designer needs to check steel shear design resistance separately.
- Reference "Anchor Design Methodology" on page 10 for the descriptions of N_{Rd} and V_{Rd}
- Concrete is considered un-reinforced, and therefore concrete splitting and spalling is not controlled. If reinforcement is present and can be verified per ETAG TR 029 requirements, then Designer should re-evaluate the design resistances using Simpson Strong-Tie® Anchor Designer™ Software as the design values may increase significantly.
- All design resistances are derived from the product's characteristic values and safety factors published in the ETA.
- Concrete edge Distance "c" is measured from edge of concrete to centerline of the bolt(s). Anchor Spacing "s" is measured from centerline of bolt(s) to centerline of bolt(s).
- Concrete is considered non-cracked when the tensile stress within the concrete is $\sigma_L + \sigma_R \leq 0$. In the absence of detailed verification $\sigma_R = 3$ N/mm² can be assumed (σ_L equals the tensile stress within the concrete induced by external loads, anchors loads included).

Table 5A: SET-XP with Four Anchors, Corner, Non-Cracked Concrete (T, V//) ⁸

Design Resistance Values for TENSION and SHEAR ^{1, 2, 3, 4, 5, 6, 7}

Insert Diameter (d) = 12 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 110 mm		45		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 140 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	80	10.2	24.3	11.6	27.2	12.8	29.7	14.1	32.2	15.4	34.7	18.3	39.6
	100	11.4	30.2	12.9	33.3	14.2	35.8	15.5	38.4	17.0	40.9	20.0	46.0
	150	14.7	40.0	16.4	42.9	17.9	45.2	19.5	47.6	21.1	50.0	24.6	54.8
	200	18.6	49.7	20.6	52.4	22.3	54.7	24.1	56.9	26.0	59.2	29.9	63.8
Insert Diameter (d) = 16 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 140 mm		60		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 176 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	100	14.7	36.4	15.4	38.1	16.7	41.1	18.1	44.0	19.6	46.9	22.6	52.8
	125	16.3	45.1	17.1	46.9	18.5	49.9	20.0	52.9	21.5	55.9	24.7	62.0
	150	18.1	50.7	19.0	52.4	20.5	55.3	22.0	58.3	23.6	61.2	27.0	67.0
	200	22.0	61.8	23.0	63.5	24.7	66.3	26.4	69.0	28.2	71.8	32.0	77.3
Insert Diameter (d) = 20 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 180 mm		70		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 228 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	115	20.0	48.3	21.7	52.3	23.1	55.7	24.7	59.1	27.8	65.8	31.2	72.5
	150	22.5	64.2	24.3	68.6	25.9	72.2	27.5	75.8	30.9	83.0	34.5	90.2
	200	26.5	77.8	28.5	81.8	30.2	85.3	32.0	88.7	35.7	95.5	39.6	102.3
	250	30.9	90.7	33.1	94.6	35.0	97.9	36.9	101.1	40.9	107.7	45.2	114.2
Insert Diameter (d) = 24 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 220 mm		80		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 276 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	135	26.3	64.0	27.5	67.0	29.0	70.9	30.6	74.7	34.0	82.4	37.4	90.0
	150	27.4	71.4	28.7	75.5	30.2	78.5	31.9	82.4	35.3	90.2	38.9	98.1
	200	31.5	93.8	32.8	97.0	34.6	101.0	36.3	105.1	40.0	113.2	43.9	121.3
	300	40.7	122.8	42.3	125.8	44.3	129.5	46.4	133.2	50.7	140.6	55.2	148.0
Insert Diameter (d) = 27 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 240 mm		90		125		150		200		250		300	
Min. Concrete Thickness (h _{min}) = 300 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	155	30.7	79.1	33.0	84.9	34.6	89.1	38.1	97.3	41.7	105.6	45.5	113.9
	200	34.5	103.7	36.9	109.9	38.1	114.3	42.4	123.0	46.2	131.8	50.3	140.6
	250	39.0	119.1	41.6	124.9	43.5	129.0	47.5	137.4	51.6	145.7	55.9	154.0
	300	43.8	134.3	46.6	139.9	48.7	143.8	53.0	151.9	57.4	159.9	62.0	167.9

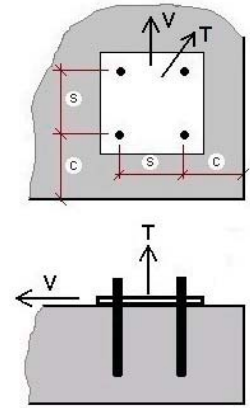


- Concrete strength is C20/25 ($f_{ck, cube} = 25$ MPa), hole condition is "dry", and exposure is temperature range 1.
- N_{Rd} value shown is based on the lesser of $N_{Rd,p}$, $N_{Rd,c}$ and $N_{Rd,sp}$. These values are good for any grade of steel used and Designer needs to check steel tension design resistance separately.
- V_{Rd} value shown is based on the lesser of $V_{Rd,c}$ and $V_{Rd,cp}$. These values are good for any grade of steel used and Designer needs to check steel shear design resistance separately.
- Reference "Anchor Design Methodology" on page 10 for the descriptions of N_{Rd} and V_{Rd}
- Concrete is considered un-reinforced, and therefore concrete splitting and spalling is not controlled. If reinforcement is present and can be verified per ETAG TR 029 requirements, then Designer should re-evaluate the design resistances using Simpson Strong-Tie® Anchor Designer™ Software as the design values may increase significantly.
- All design resistances are derived from the product's characteristic values and safety factors published in the ETA.
- Concrete edge Distance "c" is measured from edge of concrete to centerline of the bolt(s). Anchor Spacing "s" is measured from centerline of bolt(s) to centerline of bolt(s).
- Concrete is considered non-cracked when the tensile stress within the concrete is $\sigma_L + \sigma_R \leq 0$. In the absence of detailed verification $\sigma_R = 3$ N/mm² can be assumed (σ_L equals the tensile stress within the concrete induced by external loads, anchors loads included).

Table 5B: SET-XP with Four Anchors, Corner, Cracked Concrete (T, V//) ⁸

Design Resistance Values for TENSION and SHEAR ^{1, 2, 3, 4, 5, 6, 7}

Insert Diameter (d) = 12 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 110 mm		45		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 140 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	80	7.3	17.2	8.3	19.3	9.1	21.1	10.0	22.8	11.0	24.6	13.1	28.1
	100	8.1	21.4	9.2	23.6	10.1	25.4	11.1	27.2	12.1	29.0	14.3	32.6
	150	10.5	28.3	11.7	30.4	12.8	32.0	13.9	33.7	15.1	35.4	17.6	38.8
	200	13.2	35.2	14.7	37.1	15.9	38.7	17.2	40.3	18.5	41.9	21.3	45.2
Insert Diameter (d) = 16 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 140 mm		60		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 176 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	100	10.4	25.8	11.0	27.0	11.9	29.1	12.9	31.2	13.9	33.2	16.1	37.4
	125	11.6	31.9	12.2	33.2	13.2	35.3	14.3	37.5	15.3	39.6	17.6	43.9
	150	12.9	35.9	13.5	37.1	14.6	39.2	15.7	41.3	16.8	43.3	19.3	47.5
	200	15.7	43.8	16.4	45.0	17.6	46.9	18.8	48.9	20.1	50.9	22.8	54.8
Insert Diameter (d) = 20 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 180 mm		70		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 228 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	115	14.3	34.2	15.5	37.1	16.5	39.4	17.6	41.8	19.8	46.6	22.2	51.4
	150	16.1	45.5	17.4	48.6	18.5	51.1	19.6	53.7	22.0	58.8	24.6	63.9
	200	18.9	55.1	20.3	58.0	21.5	60.4	22.8	62.8	25.4	67.6	28.2	72.5
	250	22.0	64.2	23.6	67.0	24.9	69.3	26.3	71.6	29.2	76.3	32.2	80.9
Insert Diameter (d) = 24 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 220 mm		80		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 276 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	135	18.7	45.3	19.6	47.5	20.7	50.2	21.8	52.9	24.2	58.3	26.7	63.8
	150	19.5	50.6	20.4	52.8	21.6	55.6	22.7	58.4	25.2	63.9	27.7	69.5
	200	22.4	66.4	23.4	68.7	24.6	71.6	25.9	74.4	28.5	80.2	31.3	85.9
	300	29.0	87.0	30.2	89.1	31.6	91.7	33.1	94.3	36.1	99.6	39.3	104.8
Insert Diameter (d) = 27 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 240 mm		90		125		150		200		250		300	
Min. Concrete Thickness (h _{min}) = 300 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	155	21.9	56.0	23.5	60.1	24.7	63.1	27.2	68.9	29.7	74.8	32.5	80.7
	200	24.6	73.5	26.3	77.8	27.6	80.9	30.2	87.2	33.0	93.4	35.8	99.6
	250	27.8	84.3	29.6	88.5	31.0	91.4	33.8	97.3	36.8	103.2	39.9	109.1
	300	31.2	95.1	33.3	99.1	34.7	101.9	37.7	107.6	40.9	113.2	44.2	118.9

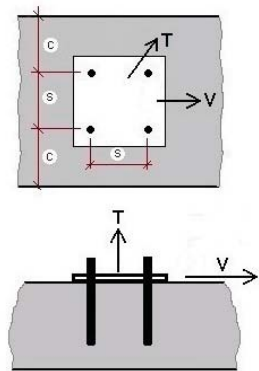


- Concrete strength is C20/25 ($f_{ck, cube} = 25$ MPa), hole condition is "dry", and exposure is temperature range 1.
- N_{Rd} value shown is based on the lesser of $N_{Rd,p}$, $N_{Rd,c}$ and $N_{Rd,sp}$. These values are good for any grade of steel used and Designer needs to check steel tension design resistance separately.
- V_{Rd} value shown is based on the lesser of $V_{Rd,c}$ and $V_{Rd,cp}$. These values are good for any grade of steel used and Designer needs to check steel shear design resistance separately.
- Reference "Anchor Design Methodology" on page 10 for the descriptions of N_{Rd} and V_{Rd}
- Concrete is considered un-reinforced, and therefore concrete splitting and spalling is not controlled. If reinforcement is present and can be verified per ETAG TR 029 requirements, then Designer should re-evaluate the design resistances using Simpson Strong-Tie® Anchor Designer™ Software as the design values may increase significantly.
- All design resistances are derived from the product's characteristic values and safety factors published in the ETA.
- Concrete edge Distance "c" is measured from edge of concrete to centerline of the bolt(s). Anchor Spacing "s" is measured from centerline of bolt(s) to centerline of bolt(s).
- Concrete is considered non-cracked when the tensile stress within the concrete is $\sigma_L + \sigma_R \leq 0$. In the absence of detailed verification $\sigma_R = 3$ N/mm² can be assumed (σ_L equals the tensile stress within the concrete induced by external loads, anchors loads included).

Table 6A: SET-XP with Four Anchors, 2-Edges, Non-Cracked Concrete (T, V//) ⁸

Design Resistance Values for TENSION and SHEAR ^{1, 2, 3, 4, 5, 6, 7}

Insert Diameter (d) = 12 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 110 mm		45		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 140 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	80	7.1	31.4	8.5	34.7	9.7	37.4	11.0	40.2	12.4	42.9	15.2	48.4
	100	8.7	39.2	10.2	42.6	11.5	45.5	12.9	48.3	14.3	51.2	17.3	56.8
	150	13.0	52.4	14.7	55.6	16.2	58.2	17.8	60.8	19.4	63.5	22.9	68.8
	200	17.6	65.3	19.6	68.3	21.3	70.9	23.2	73.4	25.0	75.9	29.0	81.0
Insert Diameter (d) = 16 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 140 mm		60		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 176 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	100	10.2	46.9	11.0	48.9	12.3	52.1	13.7	55.4	15.1	58.7	18.1	65.2
	125	12.4	58.5	13.3	60.5	14.7	63.8	16.1	67.2	17.7	70.6	20.9	77.3
	150	14.8	66.0	15.6	68.0	17.1	71.2	18.7	74.4	20.3	77.7	23.7	84.2
	200	19.7	81.0	20.7	82.8	22.4	85.9	24.1	89.0	25.9	92.0	29.7	98.2
Insert Diameter (d) = 20 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 180 mm		70		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 228 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	115	13.1	62.2	14.8	66.7	16.3	70.5	17.8	74.2	20.9	81.7	24.3	89.2
	150	16.6	83.4	18.4	88.2	20.0	92.2	21.6	96.2	25.0	104.3	28.5	112.3
	200	21.8	101.5	23.8	106.1	25.6	109.9	27.3	113.7	31.0	121.2	34.9	128.8
	250	27.4	118.9	29.6	123.2	31.5	126.9	33.4	130.5	37.4	137.7	41.7	145.0
Insert Diameter (d) = 24 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 220 mm		80		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 276 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	135	16.8	82.6	18.0	86.0	19.6	90.2	21.2	94.5	24.5	103.0	28.0	111.5
	150	18.4	92.4	19.7	95.9	21.3	100.3	22.9	104.6	26.3	113.3	29.9	122.1
	200	23.9	122.1	25.3	125.7	27.0	130.2	28.8	134.7	32.5	143.7	36.4	152.7
	300	35.9	161.1	37.4	164.4	39.5	168.5	41.5	172.6	45.8	180.8	50.3	189.0
Insert Diameter (d) = 27 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 240 mm		90		125		150		200		250		300	
Min. Concrete Thickness (h _{min}) = 300 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	155	20.2	102.2	22.4	108.6	24.1	113.2	27.6	122.4	31.2	131.6	35.0	140.8
	200	25.3	134.8	27.8	141.6	29.5	146.5	33.2	156.2	37.1	166.0	41.1	175.8
	250	31.3	155.4	33.9	161.9	35.8	166.5	39.8	175.8	44.0	185.0	48.3	194.3
	300	37.6	175.9	40.4	182.1	42.4	186.5	46.7	195.4	51.1	204.3	55.7	213.2

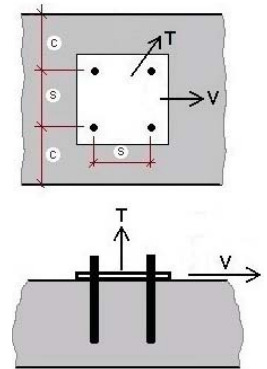


- Concrete strength is C20/25 ($f_{ck, cube} = 25$ MPa), hole condition is "dry", and exposure is temperature range 1.
- N_{Rd} value shown is based on the lesser of $N_{Rd,p}$, $N_{Rd,c}$ and $N_{Rd,sp}$. These values are good for any grade of steel used and Designer needs to check steel tension design resistance separately.
- V_{Rd} value shown is based on the lesser of $V_{Rd,c}$ and $V_{Rd,cp}$. These values are good for any grade of steel used and Designer needs to check steel shear design resistance separately.
- Reference "Anchor Design Methodology" on page 10 for the descriptions of N_{Rd} and V_{Rd}
- Concrete is considered un-reinforced, and therefore concrete splitting and spalling is not controlled. If reinforcement is present and can be verified per ETAG TR 029 requirements, then Designer should re-evaluate the design resistances using Simpson Strong-Tie® Anchor Designer™ Software as the design values may increase significantly.
- All design resistances are derived from the product's characteristic values and safety factors published in the ETA.
- Concrete edge Distance "c" is measured from edge of concrete to centerline of the bolt(s). Anchor Spacing "s" is measured from centerline of bolt(s) to centerline of bolt(s).
- Concrete is considered non-cracked when the tensile stress within the concrete is $\sigma_L + \sigma_R \leq 0$. In the absence of detailed verification $\sigma_R = 3$ N/mm² can be assumed (σ_L equals the tensile stress within the concrete induced by external loads, anchors loads included).

Table 6B: SET-XP with Four Anchors, 2-Edges, Cracked Concrete (T, V//) ⁸

Design Resistance Values for TENSION and SHEAR ^{1, 2, 3, 4, 5, 6, 7}

Insert Diameter (d) = 12 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 110 mm		45		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 140 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	80	5.1	22.2	6.1	24.6	6.9	26.5	7.9	28.5	8.8	30.4	10.9	34.3
	100	6.2	27.8	7.3	30.2	8.2	32.2	9.2	34.2	10.2	36.2	12.4	40.3
	150	9.2	37.1	10.5	39.4	11.5	41.2	12.7	43.1	13.8	45.0	16.3	48.7
	200	12.6	46.2	14.0	48.4	15.2	50.2	16.5	52.0	17.8	53.8	20.7	57.4
Insert Diameter (d) = 16 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 140 mm		60		75		100		125		150		200	
Min. Concrete Thickness (h _{min}) = 176 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	100	7.3	33.2	7.8	34.6	8.8	36.9	9.7	39.2	10.8	41.6	12.9	46.2
	125	8.9	41.4	9.5	42.8	10.5	45.2	11.5	47.6	12.6	50.0	14.9	54.7
	150	10.5	46.8	11.2	48.1	12.2	50.4	13.3	52.7	14.5	55.0	16.9	59.6
	200	14.0	57.4	14.7	58.7	15.9	60.8	17.2	63.0	18.5	65.2	21.2	69.5
Insert Diameter (d) = 20 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 180 mm		70		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 228 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	115	9.4	44.1	10.6	47.3	11.6	49.9	12.7	52.6	14.9	57.9	17.3	63.2
	150	11.8	59.1	13.1	62.5	14.2	65.3	15.4	68.2	17.8	73.9	20.3	79.5
	200	15.6	71.9	17.0	75.1	18.2	77.8	19.5	80.5	22.1	85.9	24.9	91.3
	250	19.5	84.2	21.1	87.3	22.4	89.9	23.8	92.4	26.7	97.6	29.7	102.7
Insert Diameter (d) = 24 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 220 mm		80		100		125		150		200		250	
Min. Concrete Thickness (h _{min}) = 276 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	135	12.0	58.5	12.8	60.9	14.0	63.9	15.1	66.9	17.5	73.0	20.0	79.0
	150	13.1	65.5	14.0	67.9	15.2	71.0	16.3	74.1	18.7	80.3	21.3	86.5
	200	17.1	86.5	18.0	89.1	19.3	92.2	20.5	95.4	23.2	101.8	25.9	108.2
	300	25.6	114.1	26.7	116.4	28.1	119.4	29.6	123.0	32.7	128.1	35.8	133.9
Insert Diameter (d) = 27 mm		Anchor Spacing (s)											
Effective Embedment (h _{ef}) = 240 mm		90		125		150		200		250		300	
Min. Concrete Thickness (h _{min}) = 300 mm		N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
Edge Distance (c)	155	14.4	72.4	16.0	76.9	17.2	80.2	19.7	86.7	22.2	93.2	24.9	99.8
	200	18.1	95.5	19.8	100.3	21.1	103.8	23.7	110.7	26.5	117.6	29.3	124.5
	250	22.3	110.1	24.2	114.7	25.6	117.9	28.4	124.5	31.3	131.0	34.4	137.6
	300	26.8	124.6	28.8	129.0	30.2	132.1	33.3	138.4	36.4	144.7	39.7	151.0



- Concrete strength is C20/25 ($f_{ck, cube} = 25$ MPa), hole condition is "dry", and exposure is temperature range 1.
- N_{Rd} value shown is based on the lesser of $N_{Rd,p}$, $N_{Rd,c}$ and $N_{Rd,sp}$. These values are good for any grade of steel used and Designer needs to check steel tension design resistance separately.
- V_{Rd} value shown is based on the lesser of $V_{Rd,c}$ and $V_{Rd,cp}$. These values are good for any grade of steel used and Designer needs to check steel shear design resistance separately.
- Reference "Anchor Design Methodology" on page 10 for the descriptions of N_{Rd} and V_{Rd}
- Concrete is considered un-reinforced, and therefore concrete splitting and spalling is not controlled. If reinforcement is present and can be verified per ETAG TR 029 requirements, then Designer should re-evaluate the design resistances using Simpson Strong-Tie® Anchor Designer™ Software as the design values may increase significantly.
- All design resistances are derived from the product's characteristic values and safety factors published in the ETA.
- Concrete edge Distance "c" is measured from edge of concrete to centerline of the bolt(s). Anchor Spacing "s" is measured from centerline of bolt(s) to centerline of bolt(s).
- Concrete is considered non-cracked when the tensile stress within the concrete is $\sigma_L + \sigma_R \leq 0$. In the absence of detailed verification $\sigma_R = 3$ N/mm² can be assumed (σ_L equals the tensile stress within the concrete induced by external loads, anchors loads included).