calculation result of formula (1), but replacing "Ac" with "$_N$Ac2"(refer to figure (d)), and that the calculation result of formula (3).

b. Shear stress will be lower figure of that calculation result of formula (1u), but replacing "Ac" with "$_N$Ac2" (refer to figure (d)), and that the calculation result of formula (3u). When it require toughness, it supposed to be decided by (3u)

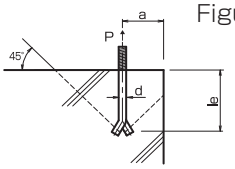
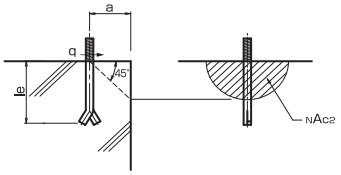


Figure (c): Effective horizontal projected area that influenced by edge stance. (When receiving tensile force)



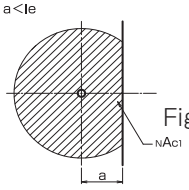


Figure (d): Effective horizontal projected area that influenced by edge distance. (When receiving shear force)

Calculation Method of JL bolt application

§ 1. Design overview

1-1) Use material and allowable stress

(1) Design criteria strength of concrete
$\sigma CK = 30 (N/mm^2)$

(2) Allowable stress of insert (SD295A)

Allowable unit tensile stress for temporary loading
ift = 295.0 (N/mm²)

Allowable unit shear stress for temporary loading
ifs = 170.3(N/mm²)

(3) Allowable stress of bolt (High tension bolt10.9)

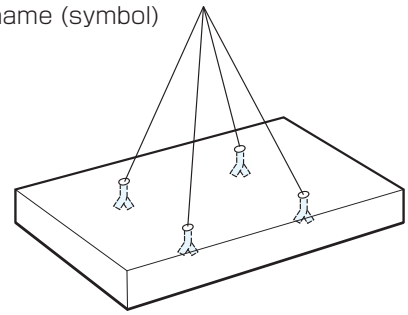
Allowable unit tensile stress for temporary loading
bft = 495.0(N/mm²)

Allowable unit shear stress for temporary loading
bfs = 240.5(N/mm²)

(4) Impact load (for construction load)
z = 1.6

1-2) Product diagram

(1) Product name (symbol) PC-1



§ 2. Consideration

2-1) Condition of considering assumption

(1) Product name (symbol)	PC-1
(2) Load/Product weight	W=20.000kN
(3) Ironware embedding surface	Horizontal plane
(4) Number of ironware embeded	ST = 4 parts
Lifting condition	Equivalent
Premium coefficient	SJ = 1.00
Angle of wire rope (horizontal)	89-60degree
Premium coefficient	SJ = 1.16

2-2) Weight applied to single ironware

〔Load(tensile strength)〕 P = (W/ST) x SJ x SK1 x z
=(20.000 / 4) x1.00 x1.16 x 1.6
=9.280kN

2-3) Consideration of mounting bolt (temporary loading)

Use bolt High tension bolt 10.9 M16

Effective cross section area of screw part
bAN=157.0/mm²

Allowable unit shear stress
bfs=240.5(N/mm²)

(1) Allowable tensile stress
Pa(1)=bAN x bft
=157.0 x 495.0
= 77.715kN > P=9.280kN (α =0.12) OK

(2) Allowable shear stress
Qa(1)=bAN x bft
=157.0 x 240.5
=37.758kN > Q=0.000kN

2-4) Consideration of insert (temporary loading)

Use insert JL Y insert
D25 x 125 (M16)

Effective cross section area of screw part
iAN=506.7-157.0

Allowable unit tensile stress
ift=295.0(N/mm²)

Allowable unit shear stress
ifs=170.3(N/mm²)

(1) Allowable tensile stress
Pa(2)=iAN x ift
=349.7 x 295.0
=77.715kN > P=9.280kN (α =0.12) OK

(2) Allowable shear stress
Qa(2)=iAN x ifs
=349.7 x 170.3
=59.553kN > Q=0.000kN

2-5) Consideration of concrete (temporary loading)

Design criteria strength of concrete $\sigma CK = 30 (N/mm^2)$
Embeded depth of insert Le = 125.0mm
Ironware embeded place (left end) X1 = 250.0mm
Ironware embeded place (right end) X2 = 500.0mm
Effective projected area of cone-like destruction of the concrete Ac

$Ac1 = \int [\sqrt{(Le^{-2} - X^{-2})}]$ {Range X2 ~ X1}
=58,904.8mm²

$Pa(3) = 0.6 \times AC(1) \times \sqrt{\sigma ck} \times 0.313209$
$= 0.6 \times 58,904.8 \times \sqrt{30} \times 0.313209$
=60.631kN > P=9.280kN
(α =0.15) OK