

結構構件詳細計算式□□

案名: 臺中市沙鹿區鹿陽國民小學第二期校舍新建工程--圖號: 1F (代表樓層:1F->1F)

PNA21-01-樓層: 1F, 梯代號: ST2, 位置序號: 8 [X9:-233,Y9:-89], 梯寬: 150 cm, 級高: 15.2, 級深: 26, 踏步數: 2, 梯長: 60.23421 cm

梯斜版長: 60.23=開根號 $(15.2*15.2+26*26)*[階數]2$

#5		上端線筋-雙層雙向型	#5 上端線筋-雙層雙向型= $(60.23++[握持長度Ld]46*2)*[排數]$ $(Int(150/12)+1)/100= 19.79 M$	19.79
#5		上端點筋-雙層雙向型	#5 上端點筋-雙層雙向型= $[單側接牆](150+[延伸+彎鉤Ldh+A1])(16+21.9)*1*[排數]$ $(Int((60.23421/15)+1)/100= 9.39 M$	9.39
#5		下端線筋-雙層雙向型	$(60.23++[握持長度Ld]46*2)*[排數](Int(150/12)+1)/100$	19.79
#5		下端點筋-雙層雙向型	$[單側接牆](150+[延伸+彎鉤Ldh+A1])(16+21.9)*1*[排數]$ $(Int((60.23421/15)+1)/100= 9.39 M$	9.39

模版計算:

模版(底模) = $60.23*150/10000= 0.90 M2$
 模版(立模) = $150*15.2*2/10000= 0.46 M2$
 模版(側邊-封單邊) = $60.23*20*1/10000= 0.12 M2$
 模版(踏步側邊-封單邊) = $(15.2*26/2)*2*1/10000= 0.04 M2$
 模版_小計 = $0.90+0.46+0.12+0.04+0.00= 1.52 M2$

RC計算:

RC(斜版) = $60.23421*150*20/1000000= 0.181 M3$
 RC(階梯) = $(15.2*26/2)*150*2/1000000= 0.059 M3$
 RC_小計 = $0.181+0.059+0.000= 0.240 M3$

-----計算結果小計-----

鋼筋計算結果:

#5=58.366 M ($58.366 M*1.560/1000= 0.0911 T$)

鋼筋小計 = 0.0911 T

模版小計(普)= 1.52 M2

混凝土小計 = 0.240 M3

PNA21-01-樓層: 1F, 梯代號: ST2, 位置序號: 9 [X10:+116,Y9:-128], 梯寬: 175 cm, 級高: 15.2, 級深: 26, 踏步數: 10, 梯長: 301.1711 cm

梯斜版長: 301.17=開根號 $(15.2*15.2+26*26)*[階數]10$

#5		上端線筋-雙層雙向型	#5 上端線筋-雙層雙向型= $(301.17++[握持長度Ld]46*2)*[排數]$ $(Int(175/12)+1)/100= 58.98 M$	58.98
#5		上端點筋-雙層雙向型	#5 上端點筋-雙層雙向型= $[單側接牆](175+[延伸+彎鉤Ldh+A1])(16+21.9)*1*[排數]$ $(Int((301.1711/15)+1)/100= 44.70 M$	44.70
#5		下端線筋-雙層雙向型	$(301.17++[握持長度Ld]46*2)*[排數](Int(175/12)+1)/100$	58.98
#5		下端點筋-雙層雙向型	$[單側接牆](175+[延伸+彎鉤Ldh+A1])(16+21.9)*1*[排數]$ $(Int((301.1711/15)+1)/100= 44.70 M$	44.70

模版計算:

模版(底模) = $301.17*175/10000= 5.27 M2$
 模版(立模) = $175*15.2*10/10000= 2.66 M2$
 模版(側邊-封單邊) = $301.17*20*1/10000= 0.60 M2$
 模版(踏步側邊-封單邊) = $(15.2*26/2)*10*1/10000= 0.20 M2$
 模版_小計 = $5.27+2.66+0.60+0.20+0.00= 8.73 M2$

RC計算:

RC(斜版) = $301.1711*175*20/1000000= 1.054 M3$
 RC(階梯) = $(15.2*26/2)*175*10/1000000= 0.346 M3$
 RC_小計 = $1.054+0.346+0.000= 1.400 M3$

-----計算結果小計-----

鋼筋計算結果:

#5=207.350 M (207.350 M*1.560/1000= 0.3235 T)

鋼筋小計 = 0.3235 T

模版小計(普)= 8.73 M2

混凝土小計 = 1.400 M3

PNA21-01-樓層: 1F, 梯代號: ST2, 位置序號: 7 [X9:+84,Y9:-46], 梯寬: 175 cm, 級高: 15.2, 級深: 26, 踏步數: 13, 梯長: 391.5224 cm

梯斜版長: 391.52=開根號(15.2*15.2+26*26)*[階數]13

#5		上端線筋-雙層雙向型	#5 上端線筋-雙層雙向型= (391.52+[握持長度Ld]46*2)*[排數] (Int(175/12)+1)/100= 72.53 M	72.53
#5		上端點筋-雙層雙向型	#5 上端點筋-雙層雙向型= [單側接牆](175+[延伸+彎鉤Ldh+A1])(16+21.9)*1)*[排數] (Int((391.5224/15)+1)/100= 57.47 M	57.47
#5		下端線筋-雙層雙向型	(391.52+[握持長度Ld]46*2)*[排數](Int(175/12)+1)/100	72.53
#5		下端點筋-雙層雙向型	[單側接牆](175+[延伸+彎鉤Ldh+A1])(16+21.9)*1)*[排數] (Int((391.5224/15)+1)/100= 57.47 M	57.47

模版計算:

模版(底模) = 391.52*175/10000= 6.85 M2

模版(立模) = 175*15.2*13/10000= 3.46 M2

模版(側邊-封單邊)= 391.52*20*1/10000= 0.78 M2

模版(踏步側邊-封單邊) = (15.2*26/2)*13*1/10000= 0.26 M2

模版_小計 = 6.85+3.46+0.78+0.26+0.00= 11.35 M2

RC計算:

RC(斜版) = 391.5224*175*20/1000000= 1.370 M3

RC(階梯) = (15.2*26/2)*175*13/1000000= 0.450 M3

RC_小計 = 1.370+0.450+0.000= 1.820 M3

-----計算結果小計-----

鋼筋計算結果:

#5=259.998 M (259.998 M*1.560/1000= 0.4056 T)

鋼筋小計 = 0.4056 T

模版小計(普)= 11.35 M2

混凝土小計 = 1.820 M3

PNA21-01-樓層: 1F, 梯代號: ST1, 位置序號: 3 [X3:+98,Y2:-28], 梯寬: 280 cm, 級高: 30.71, 級深: 28, 踏步數: 1, 梯長: 41.55844 cm

梯斜版長: 41.56=開根號(30.71*30.71+28*28)*[階數]1

#5		上端線筋-雙層雙向型	#5 上端線筋-雙層雙向型= (41.56+[握持長度Ld]46*2)*[排數] (Int(280/10)+1)/100= 38.73 M	38.73
#5		上端點筋-雙層雙向型	#5 上端點筋-雙層雙向型= [單側接牆](280+[延伸+彎鉤Ldh+A1])(16+21.9)*1)*[排數] (Int((41.55844/15)+1)/100= 9.54 M	9.54
#5		下端線筋-雙層雙向型	(41.56+[握持長度Ld]46*2)*[排數](Int(280/10)+1)/100	38.73
#5		下端點筋-雙層雙向型	[單側接牆](280+[延伸+彎鉤Ldh+A1])(16+21.9)*1)*[排數] (Int((41.55844/15)+1)/100= 9.54 M	9.54

模版計算:

模版(底模) = 41.56*280/10000= 1.16 M2

模版(立模) = 280*30.71*1/10000= 0.86 M2

模版(側邊-封單邊)= 41.56*25*1/10000= 0.10 M2

模版(踏步側邊-封單邊) = (30.71*28/2)*1*1/10000= 0.04 M2

模版_小計 = 1.16+0.86+0.10+0.04+0.00= 2.17 M2

RC計算:

RC(斜版) = 41.55844*280*25/1000000= 0.291 M3

RC(階梯) = (30.71*28/2)*280*1/1000000= 0.120 M3

RC_小計 = 0.291+0.120+0.000= 0.411 M3

-----計算結果小計-----

鋼筋計算結果:

#5=96.535 M (96.535 M*1.560/1000= 0.1506 T)
 鋼筋小計 = 0.1506 T
 模版小計(普)= 2.17 M2
 混凝土小計 = 0.411 M3

PNA21-01-樓層: 1F, 梯代號: ST1, 位置序號: 4 [X3:+98,Y2:+56], 梯寬: 280 cm, 級高: 15.71, 級深: 28, 踏步數: 5, 梯長: 160.5307 cm
 梯斜版長: 160.53=開根號(15.71*15.71+28*28)*[階數]5

#5		上端線筋-雙層雙向型	#5 上端線筋-雙層雙向型= (160.53++[握持長度Ld]46*2)*[排數] (Int(280/10)+1)/100= 73.23 M	73.23
#5		上端點筋-雙層雙向型	#5 上端點筋-雙層雙向型= [單側接牆](280+[延伸+彎鉤Ldh+A1])(16+21.9)*1)*[排數] (Int((160.5307/15)+1)/100= 34.96 M	34.96
#5		下端線筋-雙層雙向型	(160.53++[握持長度Ld]46*2)*[排數] (Int(280/10)+1)/100	73.23
#5		下端點筋-雙層雙向型	[單側接牆](280+[延伸+彎鉤Ldh+A1])(16+21.9)*1)*[排數] (Int((160.5307/15)+1)/100= 34.96 M	34.96

模版計算:

模版(底模) = 160.53*280/10000= 4.49 M2
 模版(立模) = 280*15.71*5/10000= 2.20 M2
 模版(側邊-封單邊)= 160.53*25*1/10000= 0.40 M2
 模版(踏步側邊-封單邊) = (15.71*28/2)*5*1/10000= 0.11 M2
 模版_小計 = 4.49+2.20+0.40+0.11+0.00= 7.21 M2

RC計算:

RC(斜版) = 160.5307*280*25/1000000= 1.124 M3
 RC(階梯) = (15.71*28/2)*280*5/1000000= 0.308 M3
 RC_小計 = 1.124+0.308+0.000= 1.432 M3

-----計算結果小計-----

鋼筋計算結果:

#5=216.396 M (216.396 M*1.560/1000= 0.3376 T)
 鋼筋小計 = 0.3376 T
 模版小計(普)= 7.21 M2
 混凝土小計 = 1.432 M3

PNA21-01-樓層: 1F, 梯代號: ST1, 位置序號: 2 [X0:+172,Y3:-106], 梯寬: 150 cm, 級高: 14.62, 級深: 26, 踏步數: 13, 梯長: 387.7716 cm
 梯斜版長: 387.77=開根號(14.62*14.62+26*26)*[階數]13

#5		上端線筋-雙層雙向型	#5 上端線筋-雙層雙向型= (387.77++[握持長度Ld]46*2)*[排數] (Int(150/10)+1)/100= 76.76 M	76.76
#5		上端點筋-雙層雙向型	#5 上端點筋-雙層雙向型= [單側接牆](150+[延伸+彎鉤Ldh+A1])(16+21.9)*1)*[排數] (Int((387.7716/15)+1)/100= 48.84 M	48.84
#5		下端線筋-雙層雙向型	(387.77++[握持長度Ld]46*2)*[排數] (Int(150/10)+1)/100	76.76
#5		下端點筋-雙層雙向型	[單側接牆](150+[延伸+彎鉤Ldh+A1])(16+21.9)*1)*[排數] (Int((387.7716/15)+1)/100= 48.84 M	48.84

模版計算:

模版(底模) = 387.77*150/10000= 5.82 M2
 模版(立模) = 150*14.62*13/10000= 2.85 M2
 模版(側邊-封單邊)= 387.77*25*1/10000= 0.97 M2
 模版(踏步側邊-封單邊) = (14.62*26/2)*13*1/10000= 0.25 M2
 模版_小計 = 5.82+2.85+0.97+0.25+0.00= 9.88 M2

RC計算:

RC(斜版) = 387.7716*150*25/1000000= 1.454 M3
 RC(階梯) = (14.62*26/2)*150*13/1000000= 0.371 M3
 RC_小計 = 1.454+0.371+0.000= 1.825 M3

-----計算結果小計-----

鋼筋計算結果:

#5=251.211 M (251.211 M*1.560/1000= 0.3919 T)

鋼筋小計 = 0.3919 T

模版小計(普)= 9.88 M2

混凝土小計 = 1.825 M3

PNA21-01-樓層: 1F, 梯代號: ST1, 位置序號: 1 [X0:+146,Y2:+214], 梯寬: 150 cm, 級高: 14.62, 級深: 26, 踏步數: 13, 梯長: 387.7716 cm

梯斜版長: 387.77=開根號(14.62*14.62+26*26)*[階數]13

#5		上端線筋-雙層雙向型	#5 上端線筋-雙層雙向型= (387.77+[握持長度Ld]46*2)*[排數] (Int(150/10)+1)/100= 76.76 M	76.76
#5		上端點筋-雙層雙向型	#5 上端點筋-雙層雙向型= [單側接牆](150+[延伸+彎鉤Ldh+A1])(16+21.9)*1)*[排數] (Int((387.7716/15)+1)/100= 48.84 M	48.84
#5		下端線筋-雙層雙向型	(387.77+[握持長度Ld]46*2)*[排數](Int(150/10)+1)/100	76.76
#5		下端點筋-雙層雙向型	[單側接牆](150+[延伸+彎鉤Ldh+A1])(16+21.9)*1)*[排數] (Int((387.7716/15)+1)/100= 48.84 M	48.84

模版計算:

模版(底模) = 387.77*150/10000= 5.82 M2

模版(立模) = 150*14.62*13/10000= 2.85 M2

模版(側邊-封單邊)= 387.77*25*1/10000= 0.97 M2

模版(踏步側邊-封單邊) = (14.62*26/2)*13*1/10000= 0.25 M2

模版_小計 = 5.82+2.85+0.97+0.25+0.00= 9.88 M2

RC計算:

RC(斜版) = 387.7716*150*25/1000000= 1.454 M3

RC(階梯) = (14.62*26/2)*150*13/1000000= 0.371 M3

RC_小計 = 1.454+0.371+0.000= 1.825 M3

-----計算結果小計-----

鋼筋計算結果:

#5=251.211 M (251.211 M*1.560/1000= 0.3919 T)

鋼筋小計 = 0.3919 T

模版小計(普)= 9.88 M2

混凝土小計 = 1.825 M3

PNA21-01-樓層: 1F, 梯代號: ST1, 位置序號: 5 [X4:+159,Y19:+36], 梯寬: 187.5 cm, 級高: 15.2, 級深: 26, 踏步數: 13, 梯長: 391.5224 cm

梯斜版長: 391.52=開根號(15.2*15.2+26*26)*[階數]13

#5		上端線筋-雙層雙向型	#5 上端線筋-雙層雙向型= (391.52+[握持長度Ld]46*2)*[排數] (Int(187.5/10)+1)/100= 91.87 M	91.87
#5		上端點筋-雙層雙向型	#5 上端點筋-雙層雙向型= [單側接牆](187.5+[延伸+彎鉤Ldh+A1])(16+21.9)*1)*[排數] (Int((391.5224/15)+1)/100= 60.85 M	60.85
#5		下端線筋-雙層雙向型	(391.52+[握持長度Ld]46*2)*[排數](Int(187.5/10)+1)/100	91.87
#5		下端點筋-雙層雙向型	[單側接牆](187.5+[延伸+彎鉤Ldh+A1])(16+21.9)*1)*[排數] (Int((391.5224/15)+1)/100= 60.85 M	60.85

模版計算:

模版(底模) = 391.52*187.5/10000= 7.34 M2

模版(立模) = 187.5*15.2*13/10000= 3.71 M2

模版(側邊-封單邊)= 391.52*25*1/10000= 0.98 M2

模版(踏步側邊-封單邊) = (15.2*26/2)*13*1/10000= 0.26 M2

模版_小計 = 7.34+3.71+0.98+0.26+0.00= 12.28 M2

RC計算:

RC(斜版) = 391.5224*187.5*25/1000000= 1.835 M3

RC(階梯) = (15.2*26/2)*187.5*13/1000000= 0.482 M3

RC_小計 = 1.835+0.482+0.000= 2.317 M3

-----計算結果小計-----

鋼筋計算結果:

#5=305.430 M ($305.430 \text{ M} \times 1.560/1000 = 0.4765 \text{ T}$)

鋼筋小計 = 0.4765 T

模版小計(普)= 12.28 M2

混凝土小計 = 2.317 M3

PNA21-01-樓層: 1F, 梯代號: ST1, 位置序號: 6 [X4:-28,Y19:-3], 梯寬: 187.5 cm, 級高: 15.2, 級深: 26, 踏步數: 12, 梯長: 361.4052 cm

梯斜版長: $361.41 = \text{開根號}(15.2 \times 15.2 + 26 \times 26) \times [\text{階數}]12$

#5		上端線筋-雙層雙向型	#5 上端線筋-雙層雙向型= $(361.41 + [\text{握持長度} L_d]46 \times 2) \times [\text{排數}]$ $(\text{Int}(187.5/10)+1)/100 = 86.15 \text{ M}$	86.15
#5		上端點筋-雙層雙向型	#5 上端點筋-雙層雙向型= $[\text{單側接牆}](187.5 + [\text{延伸} + \text{彎鉤} L_{dh} + A1](16+21.9) \times 1) \times [\text{排數}]$ $(\text{Int}((361.4052/15)+1)/100 = 56.34 \text{ M}$	56.34
#5		下端線筋-雙層雙向型	$(361.41 + [\text{握持長度} L_d]46 \times 2) \times [\text{排數}]$ $(\text{Int}(187.5/10)+1)/100$	86.15
#5		下端點筋-雙層雙向型	$[\text{單側接牆}](187.5 + [\text{延伸} + \text{彎鉤} L_{dh} + A1](16+21.9) \times 1) \times [\text{排數}]$ $(\text{Int}((361.4052/15)+1)/100 = 56.34 \text{ M}$	56.34

模版計算:

模版(底模) = $361.41 \times 187.5/10000 = 6.78 \text{ M2}$

模版(立模) = $187.5 \times 15.2 \times 12/10000 = 3.42 \text{ M2}$

模版(側邊-封單邊) = $361.41 \times 25 \times 1/10000 = 0.90 \text{ M2}$

模版(踏步側邊-封單邊) = $(15.2 \times 26/2) \times 12 \times 1/10000 = 0.24 \text{ M2}$

模版_小計 = $6.78 + 3.42 + 0.90 + 0.24 + 0.00 = 11.34 \text{ M2}$

RC計算:

RC(斜版) = $361.4052 \times 187.5 \times 25/1000000 = 1.694 \text{ M3}$

RC(階梯) = $(15.2 \times 26/2) \times 187.5 \times 12/1000000 = 0.445 \text{ M3}$

RC_小計 = $1.694 + 0.445 + 0.000 = 2.139 \text{ M3}$

-----計算結果小計-----

鋼筋計算結果:

#5=284.971 M ($284.971 \text{ M} \times 1.560/1000 = 0.4446 \text{ T}$)

鋼筋小計 = 0.4446 T

模版小計(普)= 11.34 M2

混凝土小計 = 2.139 M3
