

結構構件計算詳細列式查核

樓層: 2F, 版代號: S12, 位置: P001-1 [B:29,Y3:350];尺寸[樑內緣]:690.00 * 398.12 cm ;[樑心線]:720.00 * 428.12 cm ;
版厚: 12 cm

版九宮格法計算:上層筋 (查核時請調整至一律以版之長邊為縱向看)

- 第1區 #4 (上左)短向(X,橫)-左靠邊= $(99.5+[半樑]15+[邊沿錨定](15.0+18.3))*(\text{round}(172.5/18)+1)/100 = 16.3 \text{ M}$
#4 (上左)長向(Y,直)= $(172.5+[半樑]15+[長向1/2搭接]48.0/2)*(\text{round}(99.5/30)+1)/100 = 8.5 \text{ M}$
#3 加筋(上左)短向(X,橫)-左靠邊= $(99.5+[半樑]15+[邊沿錨定](15.0+13.7))*(\text{round}(172.5/30)+1)/100 = 10.0 \text{ M}$
- 第2區 #4 (上中)短向(X,橫)= $(199.1)*(\text{round}(172.5/18)+1)/100 = 21.9 \text{ M}$
#4 (上中)長向(Y,直)= $(172.5+[半樑]15+[長向1/2搭接]48.0/2)*(\text{round}(199.1/20)+1)/100 = 23.3 \text{ M}$
#3 加筋(上中)短向(X,橫)= $(199.1)*(\text{round}(172.5/30)+1)/100 = 13.9 \text{ M}$
- 第3區 #4 (上右)短向(X,橫)-右靠邊= $(99.5+[半樑]15+[邊沿錨定](15.0+18.3))*(\text{round}(172.5/18)+1)/100 = 16.3 \text{ M}$
#4 (上右)長向(Y,直)= $(172.5+[半樑]15+[長向1/2搭接]48.0/2)*(\text{round}(99.5/30)+1)/100 = 8.5 \text{ M}$
#3 加筋(上右)短向(X,橫)-右靠邊= $(99.5+[半樑]15+[邊沿錨定](15.0+13.7))*(\text{round}(172.5/30)+1)/100 = 10.0 \text{ M}$
- 第4區 #4 (下左)短向(X,橫)-左靠邊= $(99.5+[半樑]15+[邊沿錨定](15.0+18.3))*(\text{round}(172.5/18)+1)/100 = 16.3 \text{ M}$
#4 (下左)長向(Y,直)= $(172.5+[半樑]15+[長向1/2搭接]48.0/2)*(\text{round}(99.5/30)+1)/100 = 8.5 \text{ M}$
#3 加筋(下左)短向(X,橫)-左靠邊= $(99.5+[半樑]15+[邊沿錨定](15.0+13.7))*(\text{round}(172.5/30)+1)/100 = 10.0 \text{ M}$
- 第5區 #4 (下中)短向(X,橫)= $(199.1)*(\text{round}(172.5/18)+1)/100 = 21.9 \text{ M}$
#4 (下中)長向(Y,直)= $(172.5+[半樑]15+[短向1/2搭接]48.0/2)*(\text{round}(199.1/20)+1)/100 = 23.3 \text{ M}$
#3 加筋(下中)短向(X,橫)= $(199.1)*(\text{round}(172.5/30)+1)/100 = 13.9 \text{ M}$
- 第6區 #4 (下右)短向(X,橫)-右靠邊= $(99.5+[半樑]15+[邊沿錨定](15.0+18.3))*(\text{round}(172.5/18)+1)/100 = 16.3 \text{ M}$
#4 (下右)長向(Y,直)= $(172.5+[半樑]15+[長向1/2搭接]48.0/2)*(\text{round}(99.5/30)+1)/100 = 8.5 \text{ M}$
#3 加筋(下右)短向(X,橫)-右靠邊= $(99.5+[半樑]15+[邊沿錨定](15.0+13.7))*(\text{round}(172.5/30)+1)/100 = 10.0 \text{ M}$
- 第7區 #4(中左)短向(X,橫)-左靠邊= $(99.5+[半樑]15+[邊沿錨定](15.0+18.3))*(\text{round}(345.0/12)+1)/100 = 44.3 \text{ M}$
#4 (中左)長向(Y,直) = $(345.0)*(\text{round}(99.5/30)+1)/100 = 13.8 \text{ M}$
- 第8區 #4 (中中)短向(X,橫)= $199.1*(\text{round}(345.0/24)+1)/100 = 29.9 \text{ M}$
#4 (中中)長向(Y,直)= $345.0*(\text{round}(199.1/40)+1)/100 = 20.7 \text{ M}$
- 第9區 #4 (中右)短向(X,橫)-右靠邊= $(99.5+[半樑]15+[邊沿錨定](15.0+18.3))*(\text{round}(345.0/12)+1)/100 = 44.3 \text{ M}$
#4 (中右)長向(Y,直)= $(345.0)*(\text{round}(99.5/30)+1)/100 = 13.8 \text{ M}$

版九宮格法計算:下層筋 (查核時請調整至一律以版之長邊為縱向看)

- 第1區 #4 (上左)短向(X,橫)-左靠邊= $(99.5+[半樑]15+[邊沿錨定](15.0+18.3))*(\text{round}(172.5/18)+1)/100 = 16.3 \text{ M}$
#4 (上左)長向(Y,直)= $(172.5+[半樑]15+[長向1/2搭接]48.0/2)*(\text{round}(99.5/15)+1)/100 = 16.9 \text{ M}$
#3 加筋(上左)長向(Y,直)= $(172.5+[半樑]15+[長向1/2搭接]36.0/2)*(\text{round}(99.5/30)+1)/100 = 8.2 \text{ M}$
- 第2區 #4 (上中)短向(X,橫)= $(199.1)*(\text{round}(172.5/18)+1)/100 = 21.9 \text{ M}$
#4 (上中)長向(Y,直)= $(172.5+[半樑]15+[長向1/2搭接]48.0/2)*(\text{round}(199.1/10)+1)/100 = 44.4 \text{ M}$
#3 加筋(上中)長向(Y,直)= $(172.5+[半樑]15+[長向1/2搭接]36.0/2+[\text{延伸}^*]15*0.95^*1)*(\text{round}(199.1/30)+1)/100 = 17.6 \text{ M}$
- 第3區 #4 (上右)短向(X,橫)-右靠邊= $(99.5+[半樑]15+[邊沿錨定](15.0+18.3))*(\text{round}(172.5/18)+1)/100 = 16.3 \text{ M}$
#4 (上右)長向(Y,直)= $(172.5+[半樑]15+[長向1/2搭接]48.0/2)*(\text{round}(99.5/15)+1)/100 = 16.9 \text{ M}$
#3 加筋(上右)長向(Y,直)= $(172.5+[半樑]15+[短向1/2搭接]36.0/2)*(\text{round}(99.5/30)+1)/100 = 8.2 \text{ M}$
- 第4區 #4 (下左)短向(X,橫)-左靠邊= $(99.5+[半樑]15+[邊沿錨定](15.0+18.3))*(\text{round}(172.5/18)+1)/100 = 16.3 \text{ M}$
#4 (下左)長向(Y,直)= $(172.5+[半樑]15+[長向1/2搭接]48.0/2)*(\text{round}(99.5/15)+1)/100 = 16.9 \text{ M}$
#3 加筋(下左)長向(Y,直)= $(172.5+[半樑]15+[長向1/2搭接]36.0/2)*(\text{round}(99.5/30)+1)/100 = 8.2 \text{ M}$
- 第5區 #4 (下中)短向(X,橫)= $(199.1)*(\text{round}(172.5/18)+1)/100 = 21.9 \text{ M}$
#4 (下中)長向(Y,直)= $(172.5+[半樑]15+[短向1/2搭接]48.0/2)*(\text{round}(199.1/10)+1)/100 = 44.4 \text{ M}$
#3 加筋(下中)長向(Y,直)= $(172.5+[半樑]15+[長向1/2搭接]36.0/2+[\text{延伸}^*]15*0.95^*1)*(\text{round}(199.1/30)+1)/100 = 17.6 \text{ M}$
- 第6區 #4 (下右)短向(X,橫)-右靠邊= $(99.5+[半樑]15+[邊沿錨定](15.0+18.3))*(\text{round}(172.5/18)+1)/100 = 16.3 \text{ M}$
#4 (下右)長向(Y,直)= $(172.5+[半樑]15+[長向1/2搭接]48.0/2)*(\text{round}(99.5/15)+1)/100 = 16.9 \text{ M}$
#3 加筋(下右)長向(Y,直)= $(172.5+[半樑]15+[長向1/2搭接]36.0/2)*(\text{round}(99.5/30)+1)/100 = 8.2 \text{ M}$
- 第7區 #4(中左)短向(X,橫)-左靠邊= $(99.5+[半樑]15+[邊沿錨定](15.0+18.3))*(\text{round}(345.0/24)+1)/100 = 22.2 \text{ M}$
#4 (中左)長向(Y,直) = $(345.0)*(\text{round}(99.5/15)+1)/100 = 27.6 \text{ M}$
- 第8區 #4 (中中)短向(X,橫)= $199.1*(\text{round}(345.0/12)+1)/100 = 59.7 \text{ M}$
#4 (中中)長向(Y,直)= $345.0*(\text{round}(199.1/20)+1)/100 = 38.0 \text{ M}$
- 第9區 #4 (中右)短向(X,橫)-右靠邊= $(99.5+[半樑]15+[邊沿錨定](15.0+18.3))*(\text{round}(345.0/24)+1)/100 = 22.2 \text{ M}$
#4 (中右)長向(Y,直)= $(345.0)*(\text{round}(99.5/15)+1)/100 = 27.6 \text{ M}$

工作筋:

一般層版厚未達工作筋最低設定厚度 :15 cm ,不予計算!!!

#3版長短向施工支撐工作筋(不論版厚如何均須計入):

長向總長: $428.12*(\text{ceiling}(690.00/200)+1) = 2140.60 \text{ cm}$

短向總長: $720.00*(\text{ceiling}(398.12/200)+1) = 2160.00 \text{ cm}$

版長短向施工支撐工作筋總長: $(2140.60+2160.00)/100 = 43.01 \text{ M}$

模版計算:

模版面積: 計算式:[不規則形狀直接計算取得之面積值] $27.31 = 27.31 \text{ M}^2$

註: Aqe8.2採柱樑優先計算法,版面積已取樑內緣線,且扣去角柱,面積已直接由Aqe計算完成!!!

版邊沿封模計算:

(本片版無邊沿封模)=0.00 M²

模版小計: $27.31-[\text{版開口}]0.00+[\text{版開口封模}]0.00-[\text{版牆交接}]0.00=27.31 \text{ M}^2$

註:以上未計側模,側模因全歸普通模,所以獨立統計

RC計算:

[不規則形狀直接計算取得之面積值] $27.31*12/100 = 3.277 \text{ M}^3$

RC小計:3.277-[版開口RC]0.000=3.277 M3

-----計算結果小計-----

鋼筋計算結果(依開口比例扣除後): (版開口比例:0.00)

#3=179.03 M*(1-0.0000)=179.03 M (179.03 M*0.560/1000= 0.1003 T)

#4=818.60 M*(1-0.0000)=818.60 M (818.60 M*0.994/1000= 0.8137 T)

鋼筋小計(主要筋+補強筋) = 0.914 T

模版小計 = 27.31 M2

混凝土小計 = 3.277 M3
