

## Pre-poling Material

### Introduction

- The purpose of the pre-poling material is to serve as safety precaution and protection of the arch above excavation face so as to reduce the unsupported distance and avoid falling rocks.
- Except of the pipe roofing system, the most adopted measure, the fore-poling steel plate or fore-poling steel pipe can also be used as partial support when encounter the loose or fractured geology in tunnel construction.

### Function

- Pre-poling steel pipe, rod, grouting tube, and pipe roofing are installed in soft ground before excavation to form a protection layer of the excavation face.
- Steel panel is mainly applied to non cohesive soil or extremely frangible rock mass.. It can help to prevent falling rocks during excavating and support the possible falling rocks before shotcrete is totally shaped for enough support.

### Material Standard

- The material of pre-poling steel pipe conforms to CNS 2056 G3030 (middle level).
- The material of pre-poling steel rod conforms to CNS 560 A2006 SD280.
- The material of grouting tube conforms to CNS 4437 G3103 STKM 17C , JIS G3445 STKM 17C with 27.5 mm in external diameter, 14.4 mm in internal diameter, and mixer inside.
- The material of steel panel conforms to CNS 2473 G3039 SS400.

先撐鋼護版 - 斷面值  
各型式寬度及長度一覽表

長度	寬度	s=3mm/Wx=8.9cm <sup>3</sup>		s=4mm/Wx=10.6cm <sup>3</sup>	
		kg/pc	kg/m	kg/pc	kg/m
1250	ca.220	7.50	6.00	10.00	8.00
1500	ca.220	9.00	6.00	12.00	8.00
1600	ca.220	9.60	6.00	12.80	8.00
2000	ca.220	12.00	6.00	16.00	8.00



長度	寬度	s=5mm/Wx=12.2cm <sup>3</sup>		s=6mm/Wx=13.8cm <sup>3</sup>	
		kg/pc	kg/m	kg/pc	kg/m
1200	ca.220	12.00	10.00	14.40	12.00
1500	ca.220	15.00	10.00	18.00	12.00
1800	ca.220	18.00	10.00	21.60	12.00
2000	ca.220	20.00	10.00	24.00	12.00
3000	ca.220	30.00	10.00	36.00	12.00

