



4. ?????????-10????????????

5. ?????????????????????????????????????????????????????????????50????????????????????????????????????30????????????

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1. ?????????????????????

2. ?????????????????????????????

3. ?????????????????????

4. ?????????????????????

5. ?????????????????????????

????

????????2.28~2.4/????????????

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??

?? ?????(MPa) ??????(%) ???(mm) ? ? (mm) ??????(MPa) ?????

1d 3d 28d ?? ???

HGM-1????? 25-50 45-55 65-85 ?0.02 240-300 ---- ?6 ?13 6-8?

HGM-2????? 25-50 40-55 65-85 ?0.02 ---- 240-290 ?6 ?13 ??

HGM-3????? 15-30 27-45 55-65 ?0.02 240 ---- ?6 ?13 20-38?

—— 1d 3d 28d —— —— —— —— —— —— ——

HGM-4?????? ?15 40-45 55-65 ?0.02 220 —— —— —— 6-8?

??1.??????GB177-85????????????????????GB119-88????????????????

2.??????150mm????HGM-1?HGM-2??????30mm<?<150mm????HGM-1?HGM-2??????30mm

????HGM-1?HGM-3????????????HGM-4??

????????????????

???????? ?????h? ?????h?

-10?0 96 14

0?5 72 10

5?15 48 7

?15 24 7

????

1. ?????????????????????????????????????????

2. ?????????????????????????????????????????

3. ???????12-15%??????????????2-3????????5??????

4. ?????????????????????????????????????????????????????

5. ???????????????????????????????????????3-7??

6. ??????-10??40????????????????????????????

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1. ?????50kg????????????????????????

2. ?????3???????????????????????? ?

1????????????????????????????????????????