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Hydraulic Response of Rubble Mound Breakwaters

scale effects - berm breakwaters

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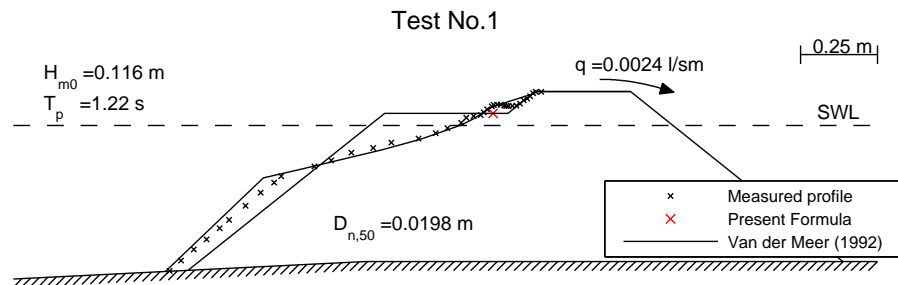
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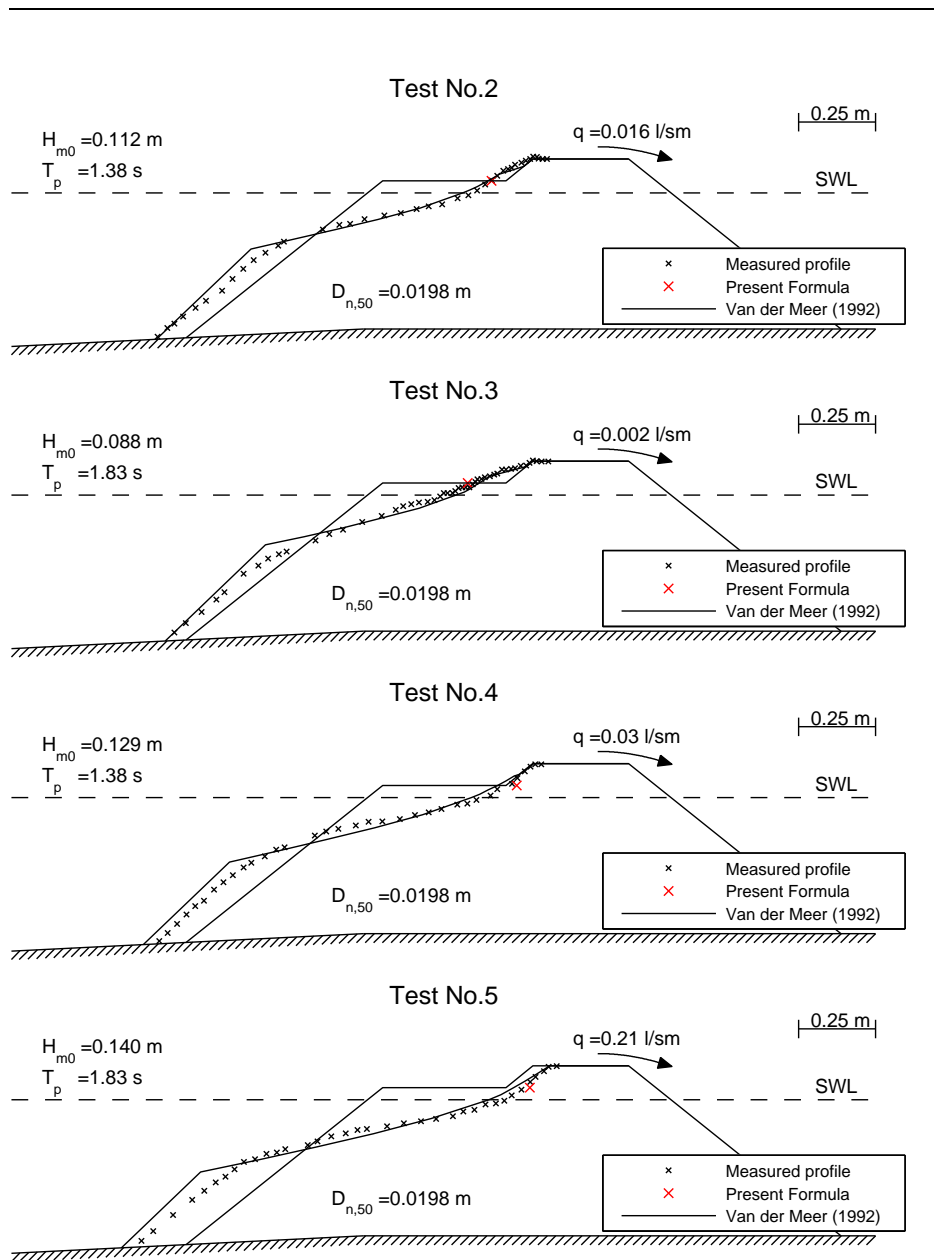
APPENDIX B

Profile Measurements from Berm Breakwater Tests

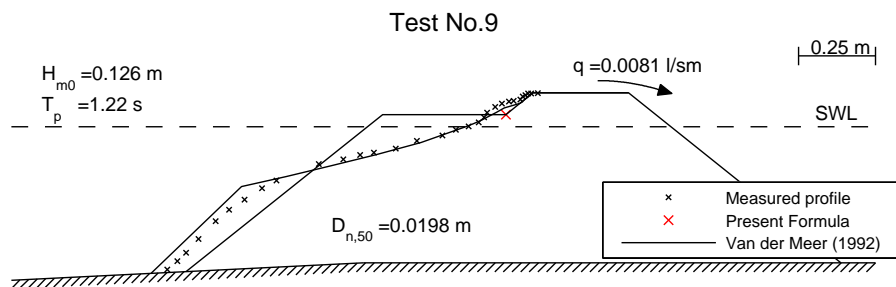
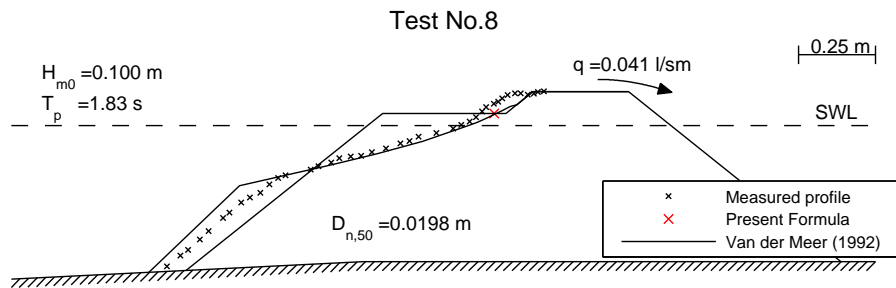
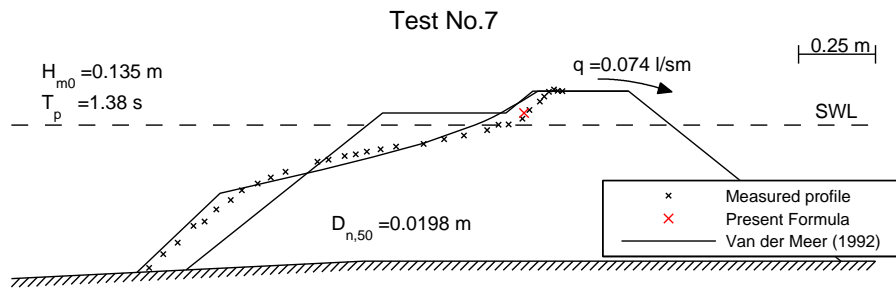
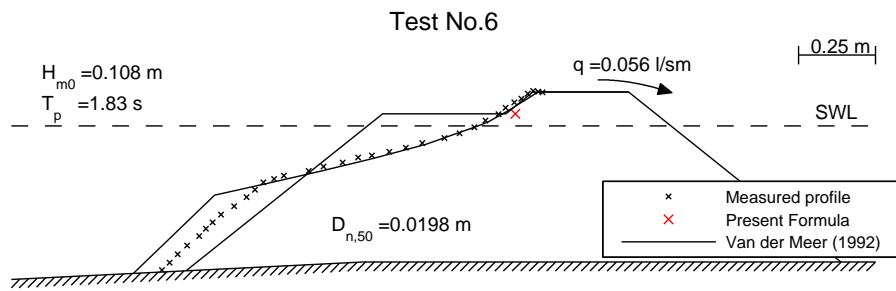
In this appendix are given figures with measured and calculated profiles. The main test parameters are also included in the figures. For tests with fixed front the profile was not measured. In tests with Armour 1 the profiles were for each cross-section only measured after completion of a group of sea states, in these cases the range of test numbers performed is given in the figure and the most severe wave parameters are given in the figure.

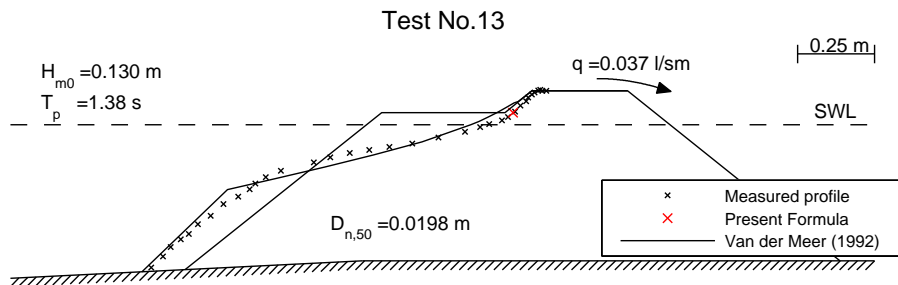
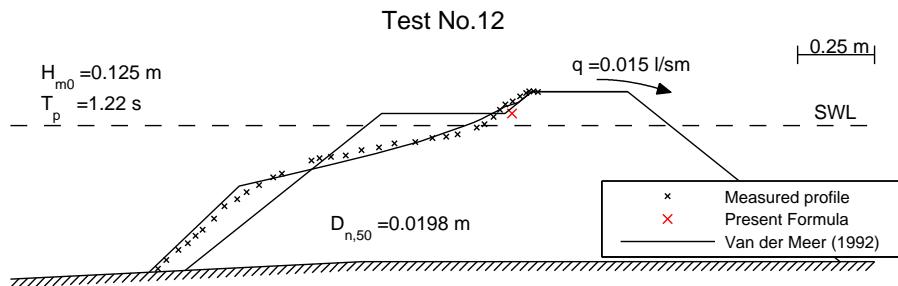
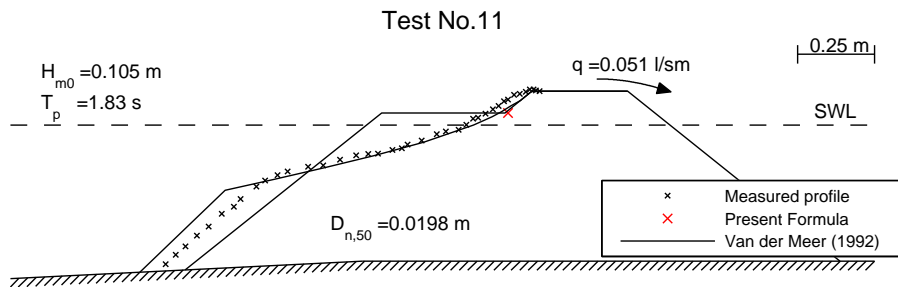
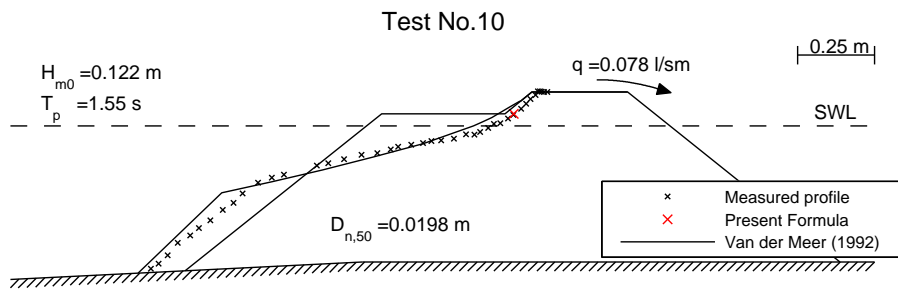
In the figures are also given profiles calculated by the Van der Meer, 1992 method. In some cases where the structure is very stable, i.e. in cases with a low berm or low stability number, the method did not give a profile. The recession calculated by the the present proposed formula (Eq. 4.34) is marked with a red cross in each figure.



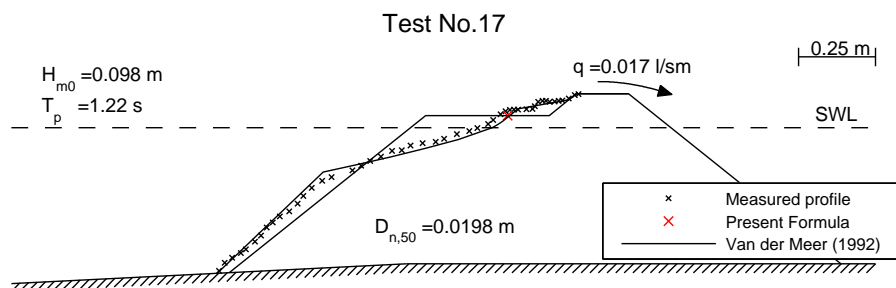
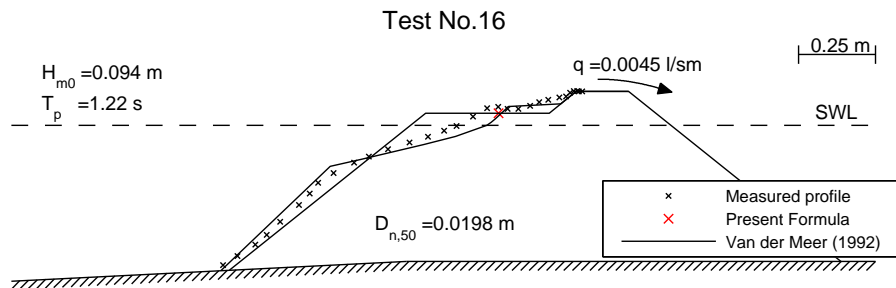
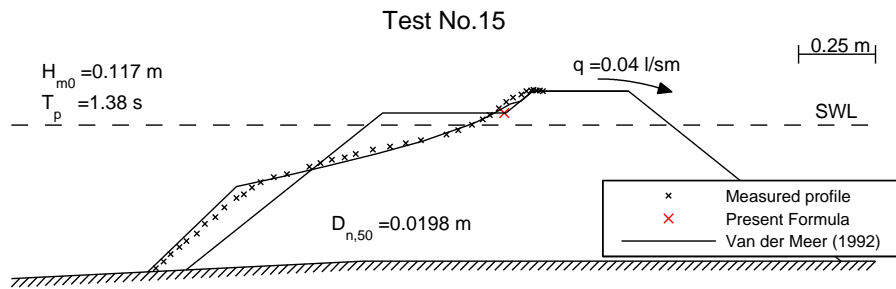
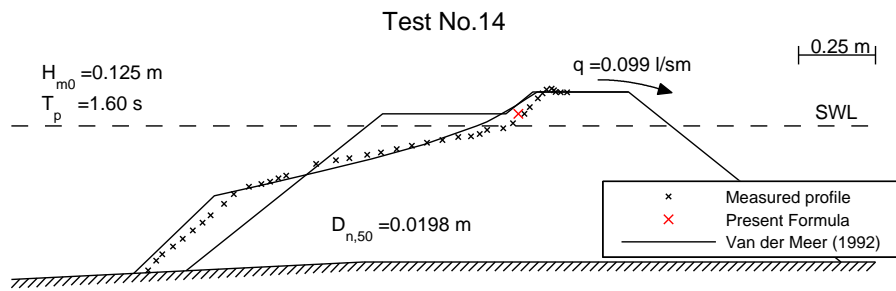


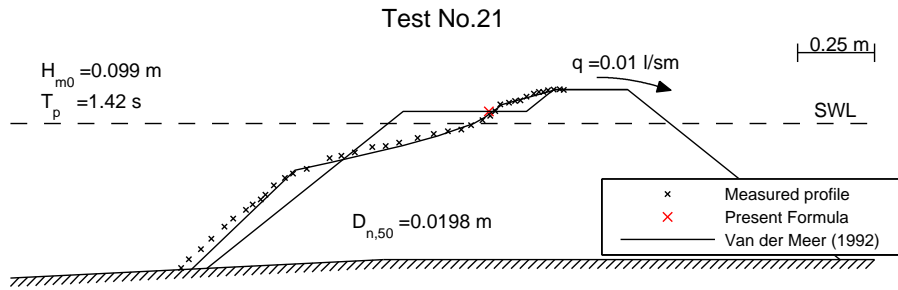
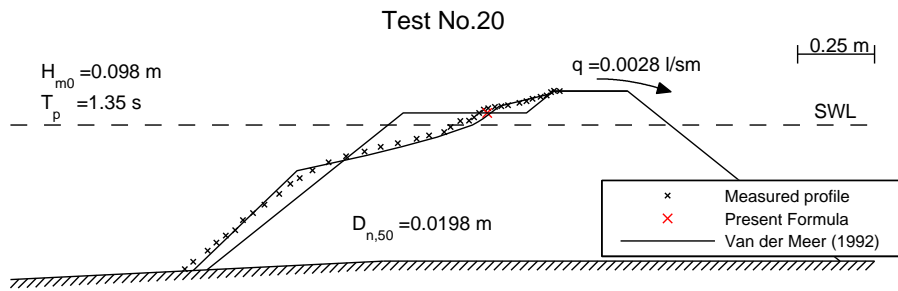
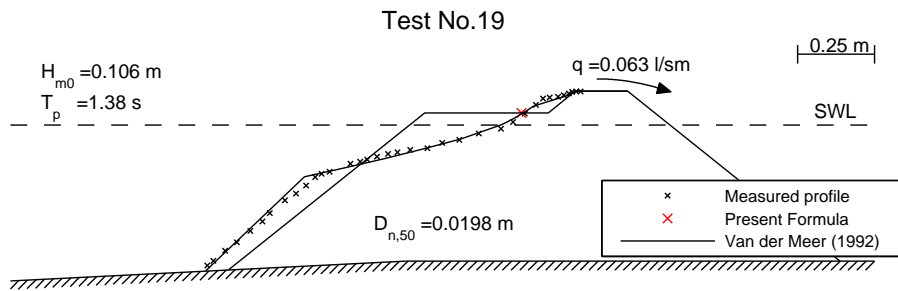
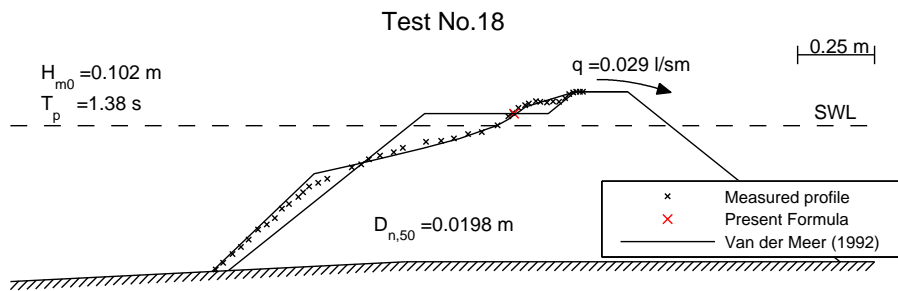
Profile Measurements from Berm Breakwater Tests



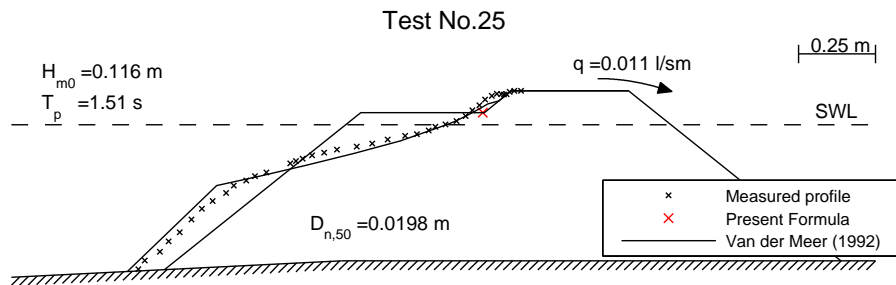
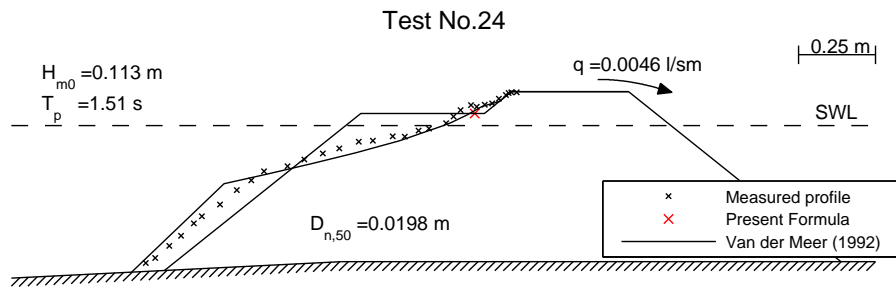
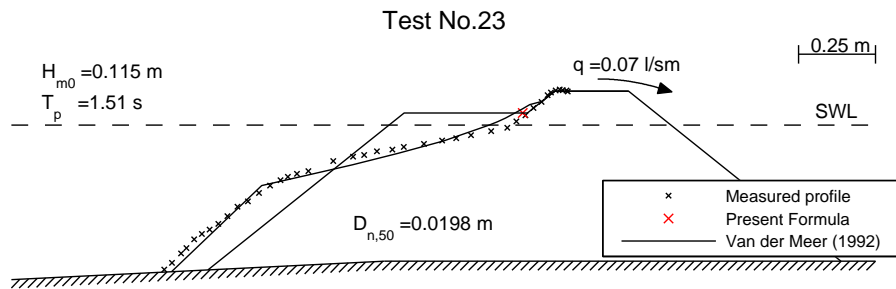
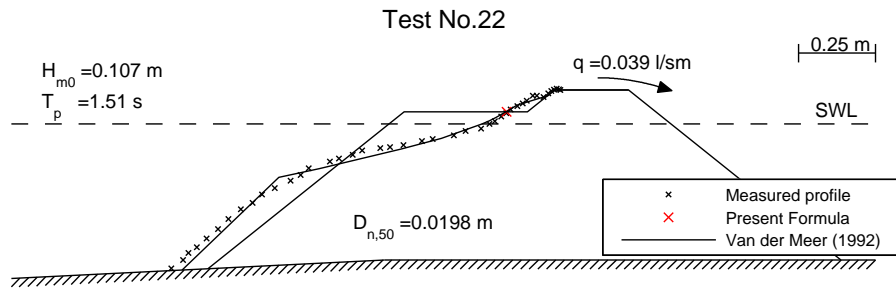


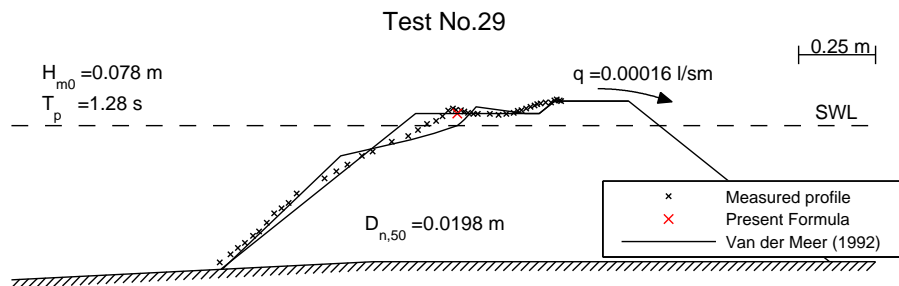
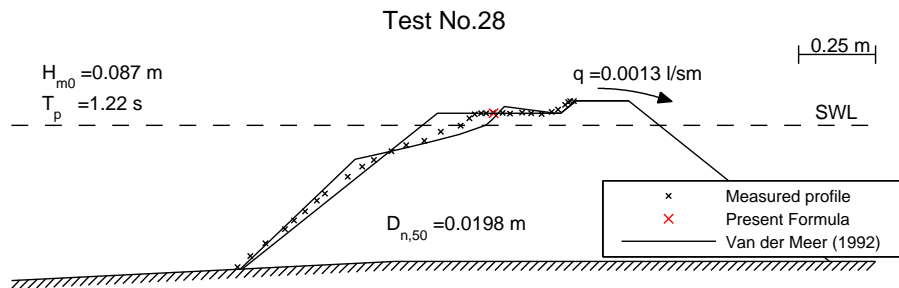
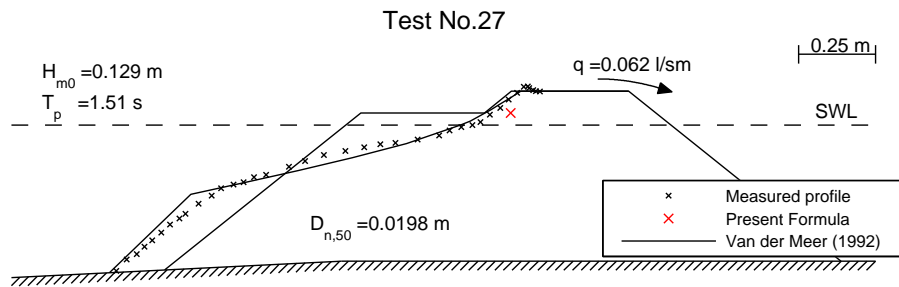
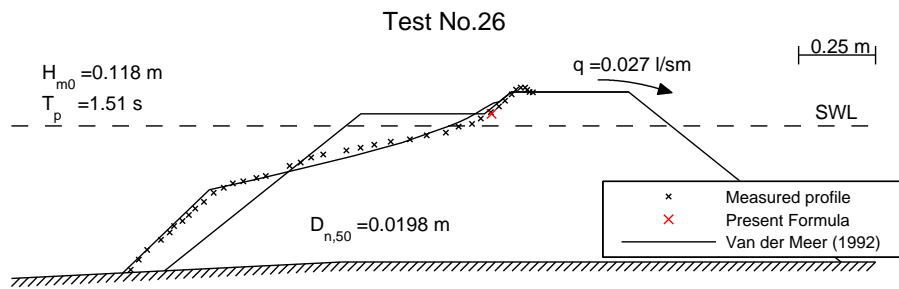
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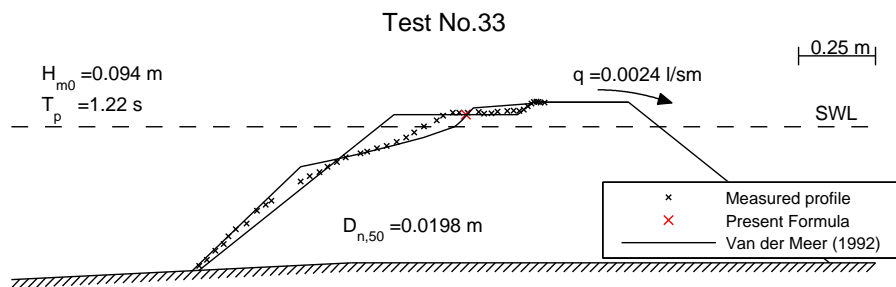
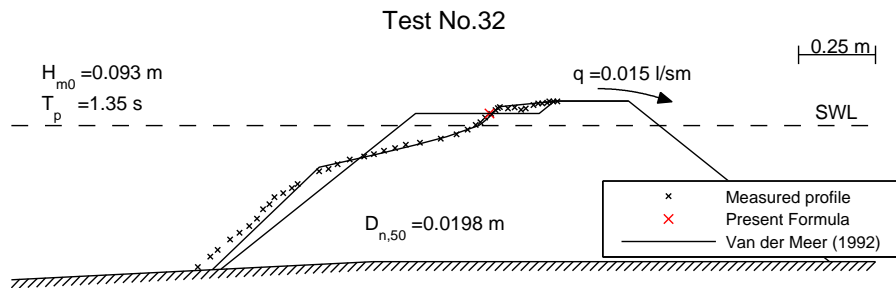
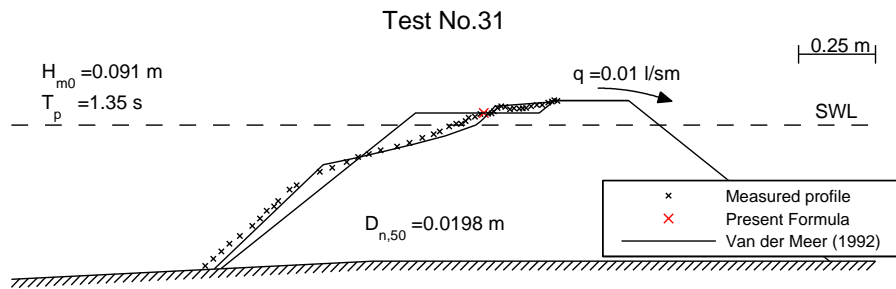
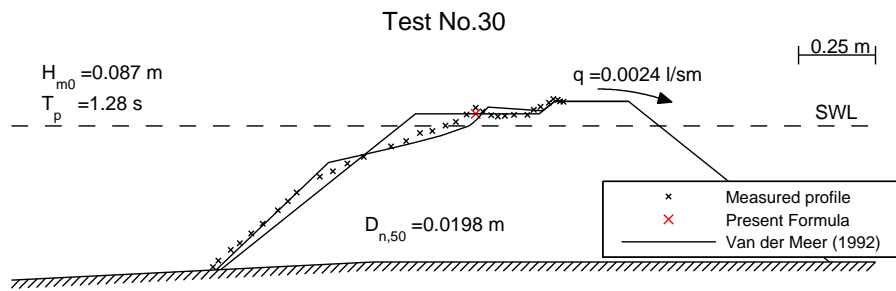


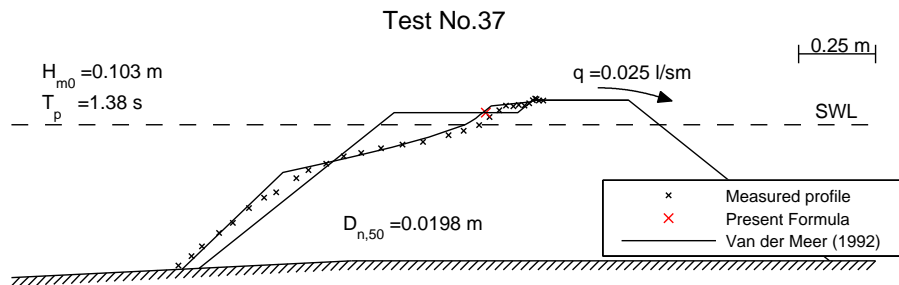
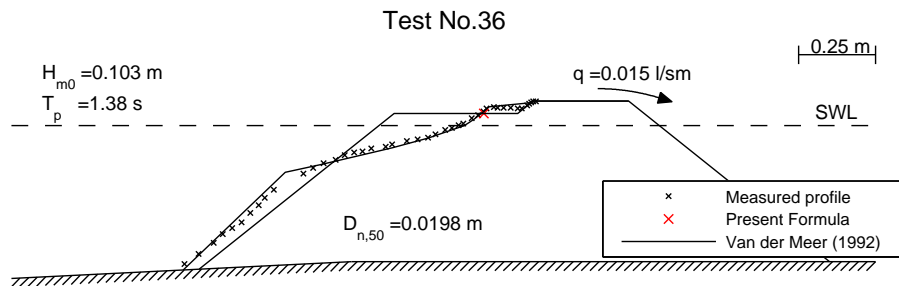
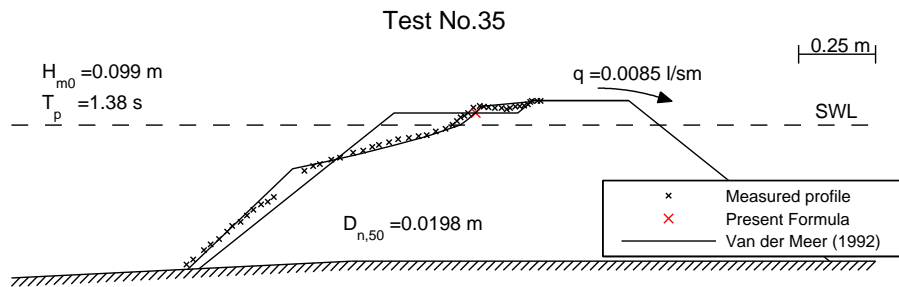
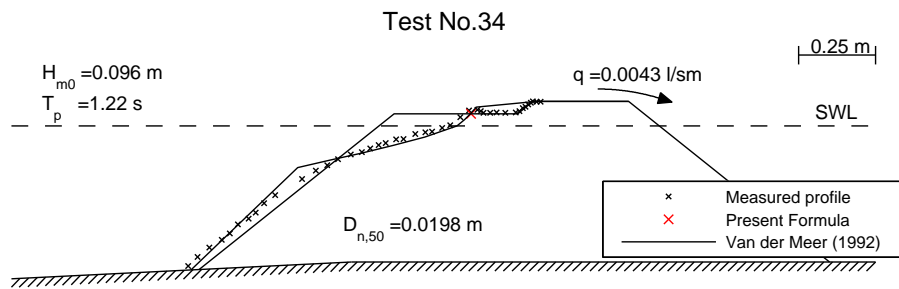
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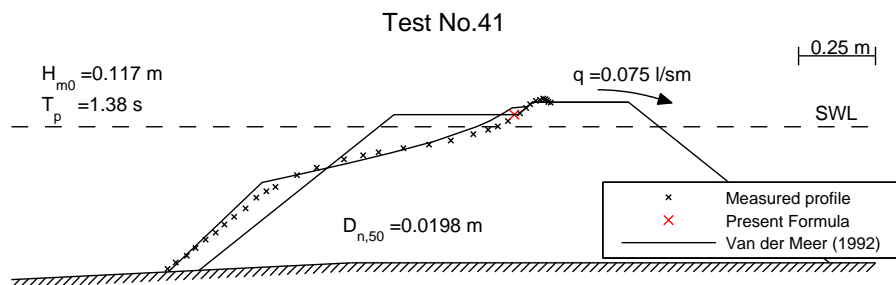
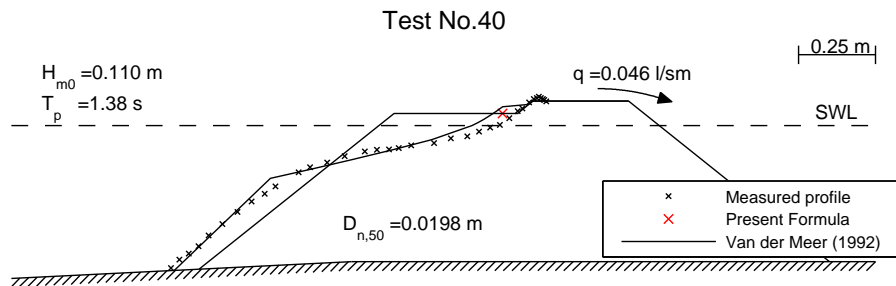
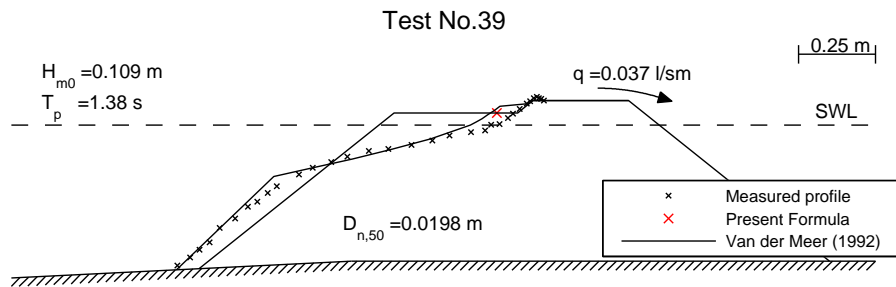
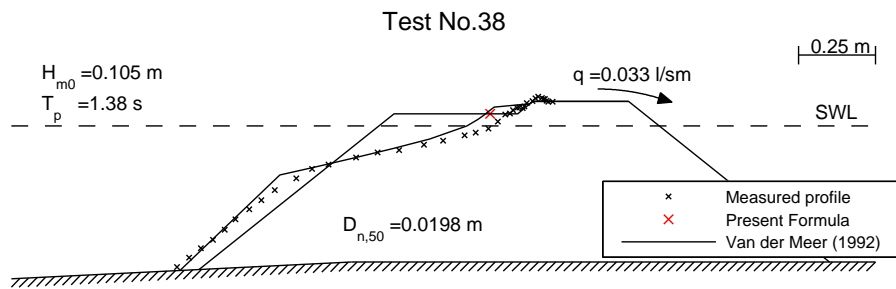


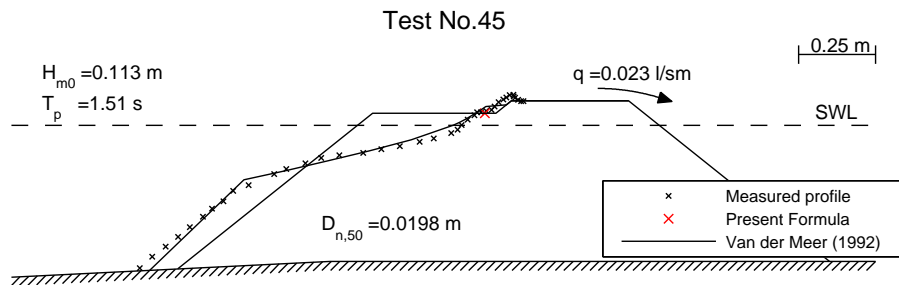
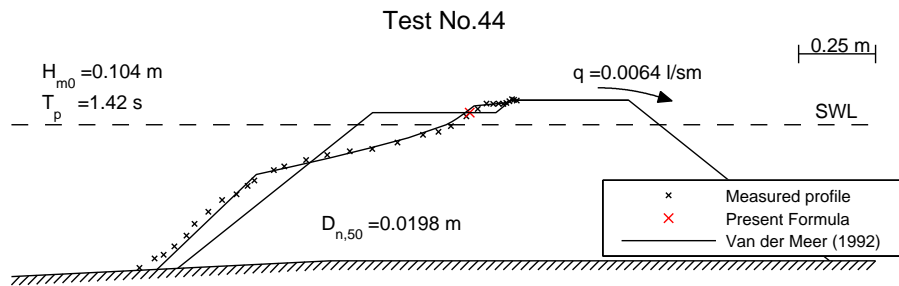
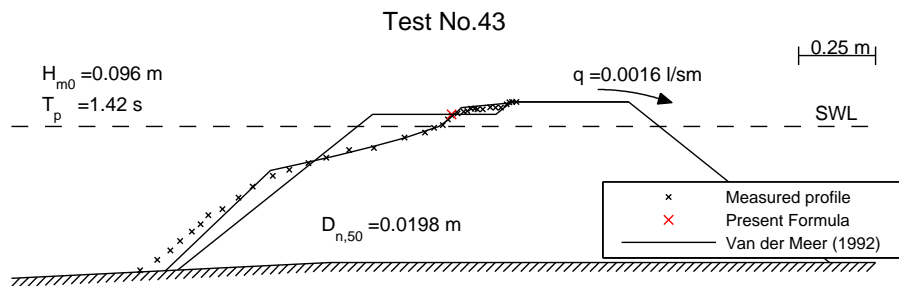
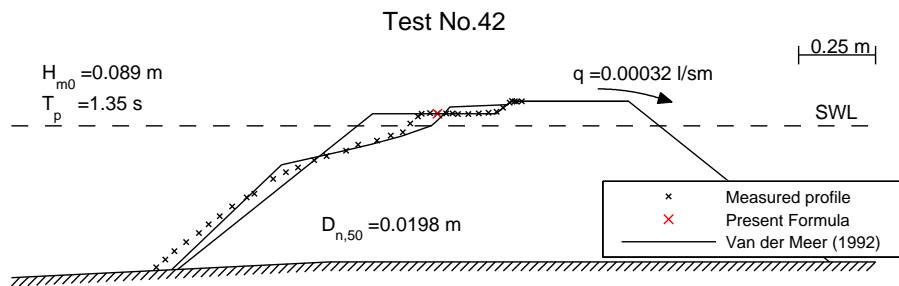
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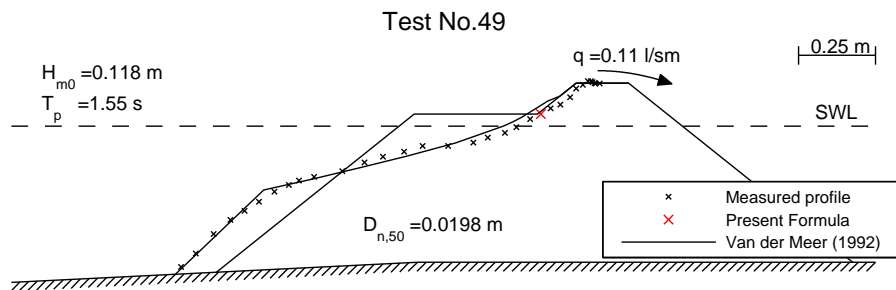
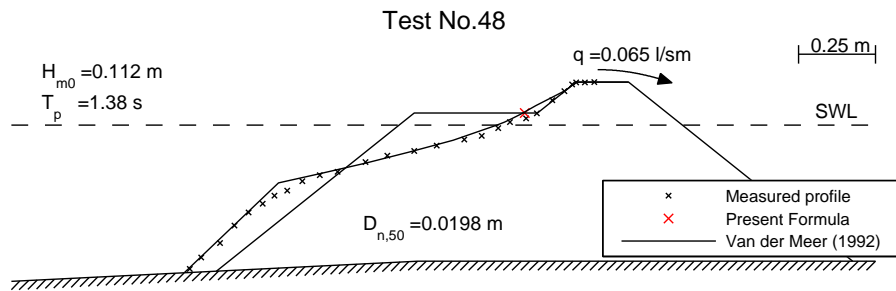
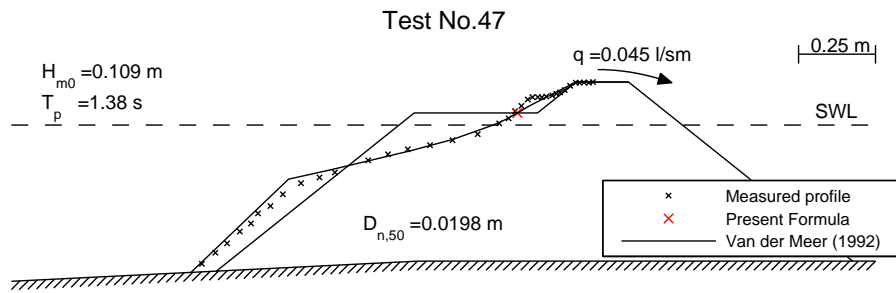
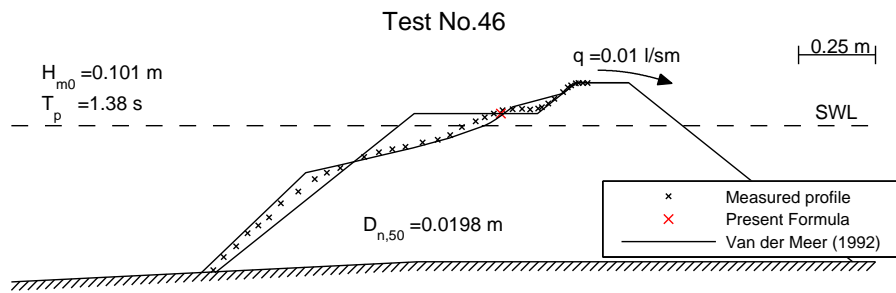


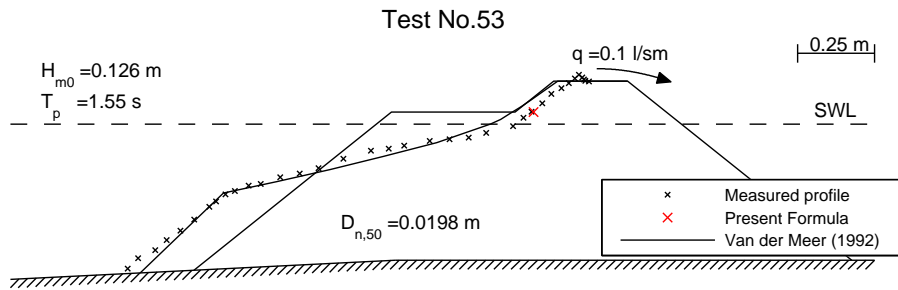
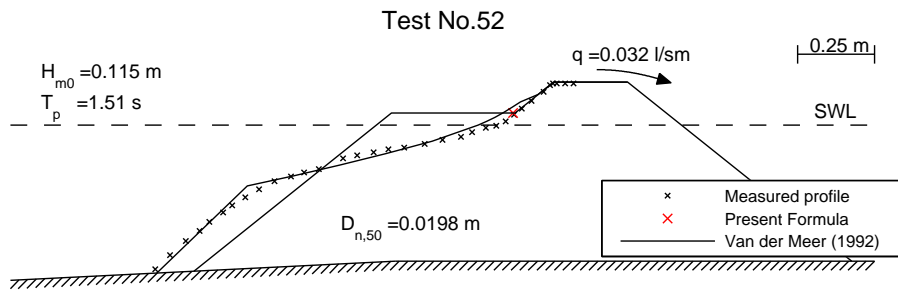
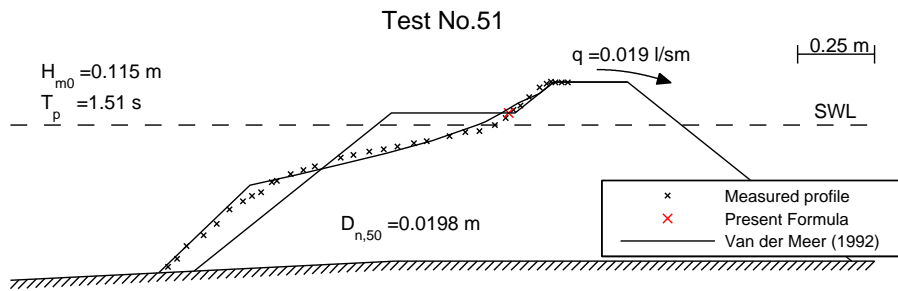
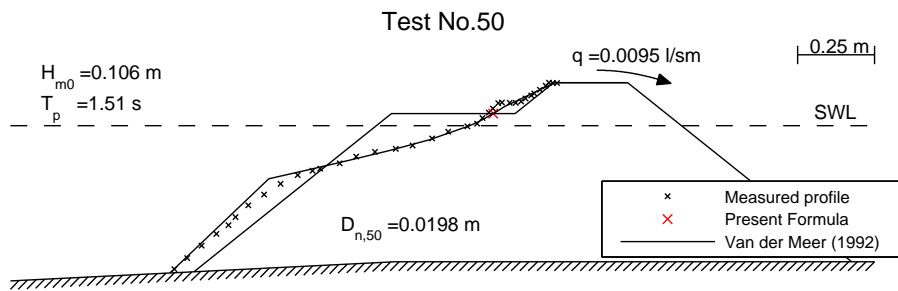
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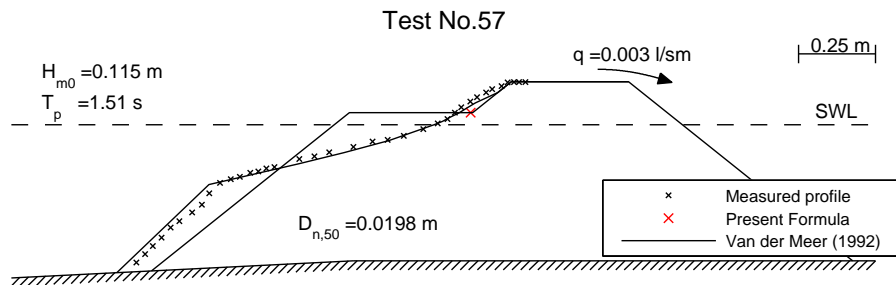
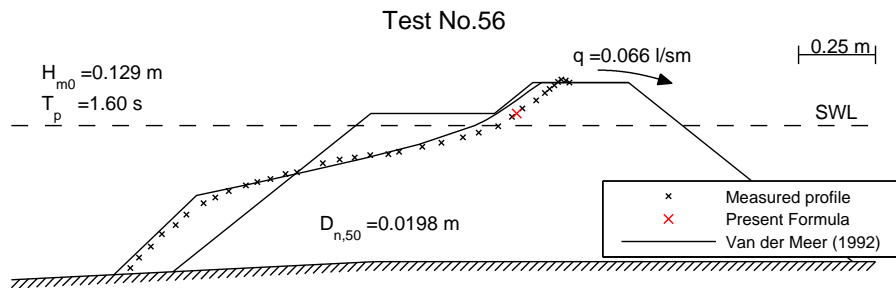
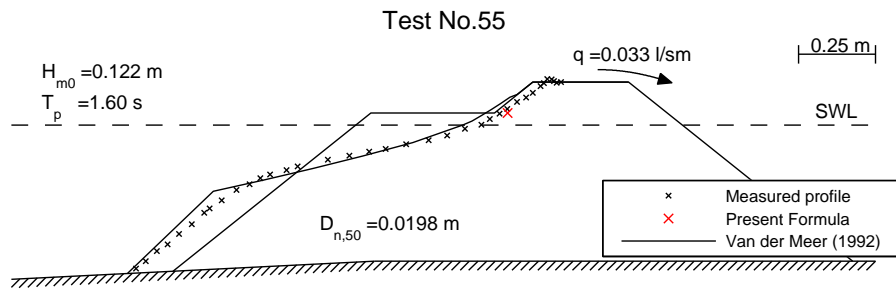
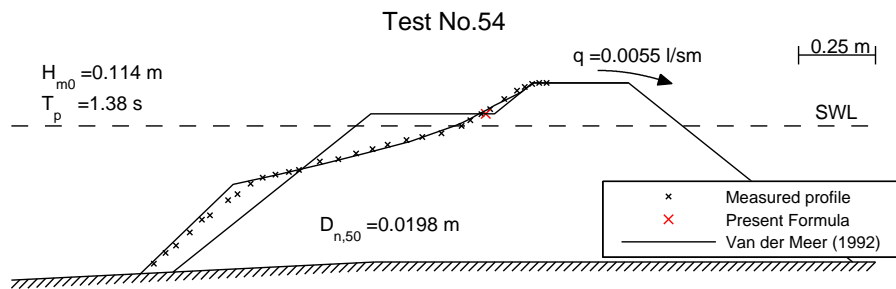


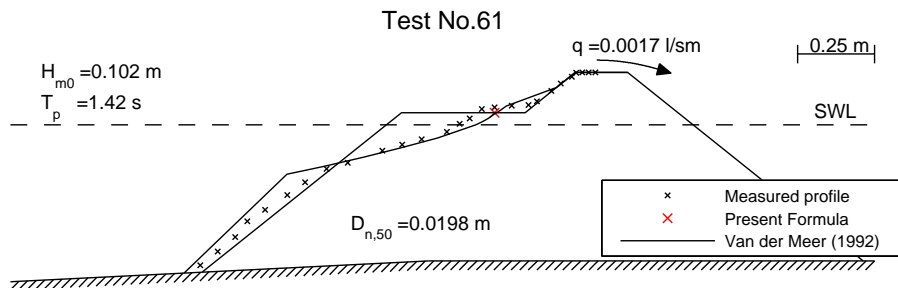
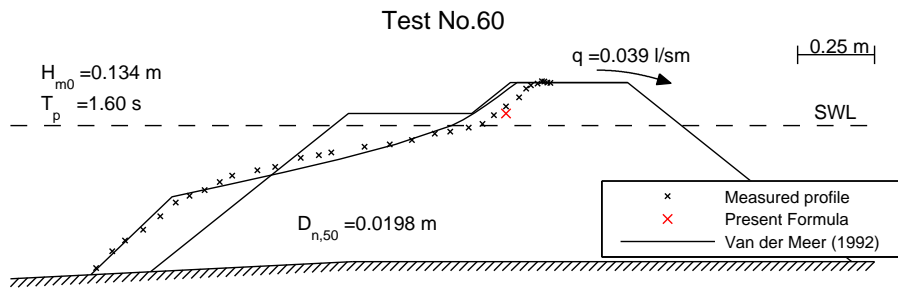
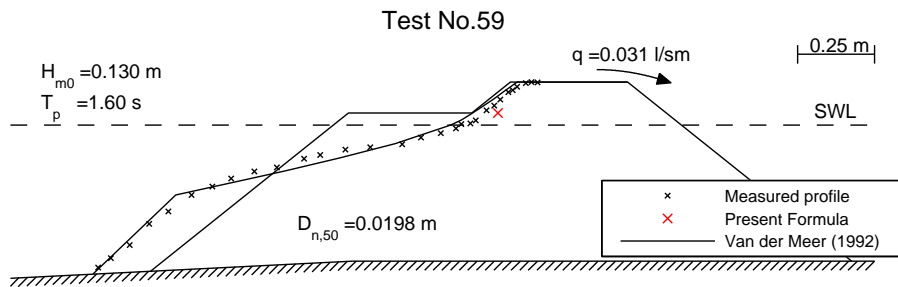
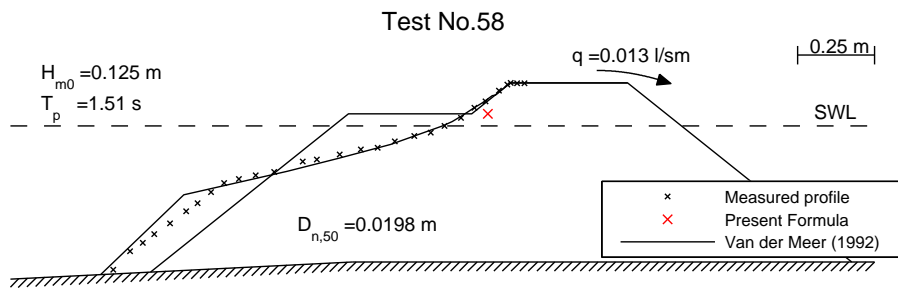
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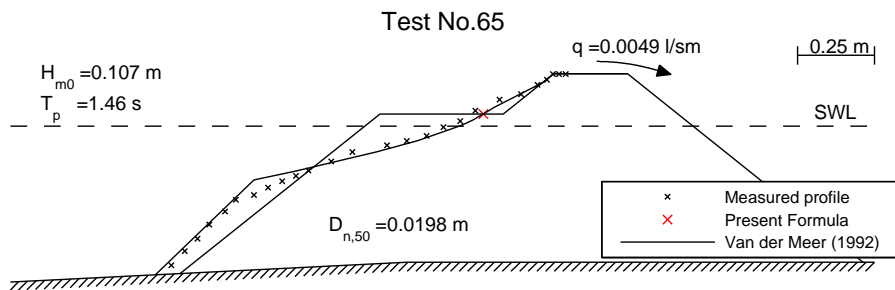
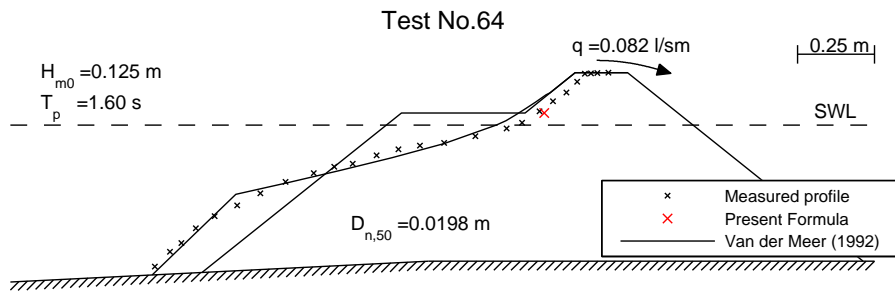
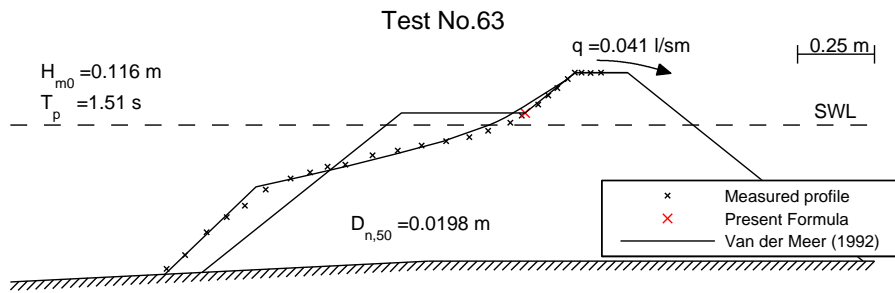
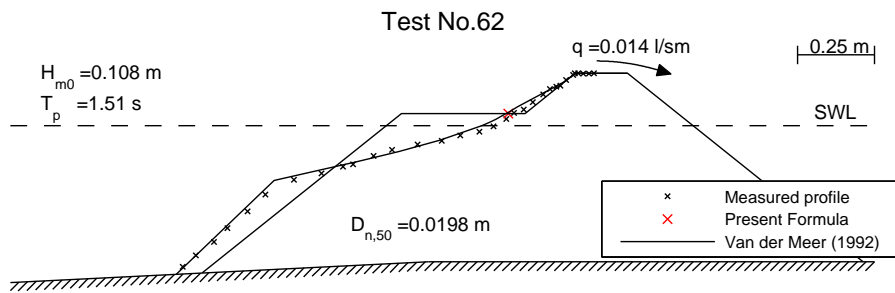


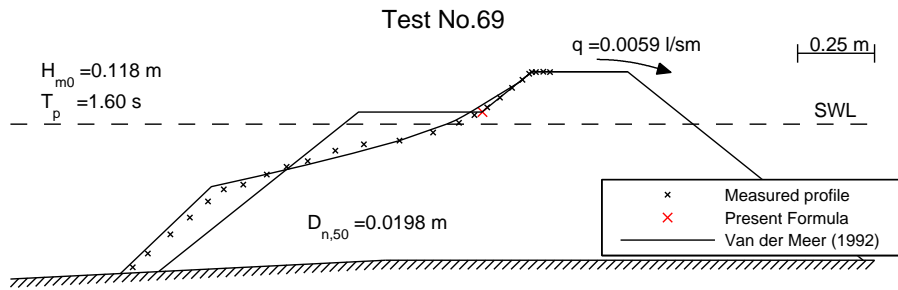
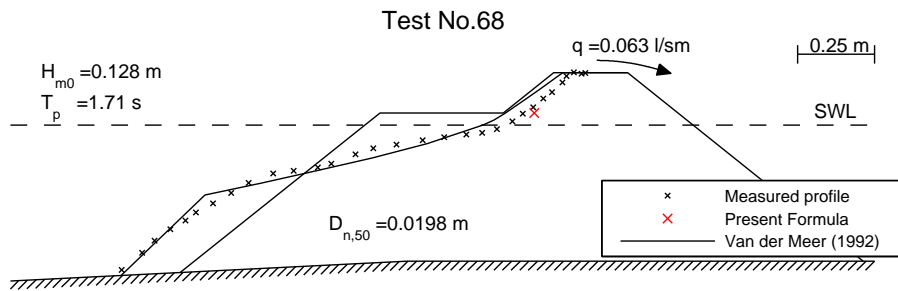
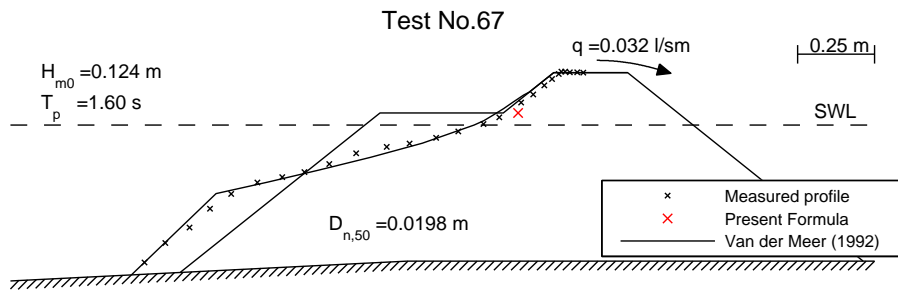
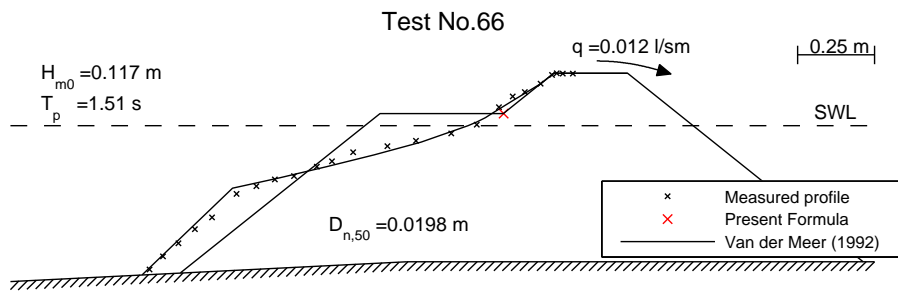
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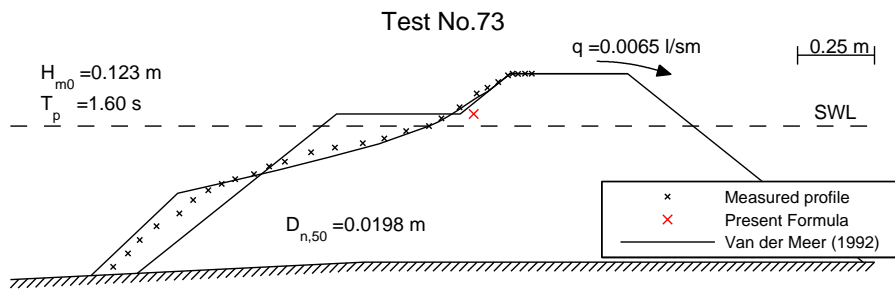
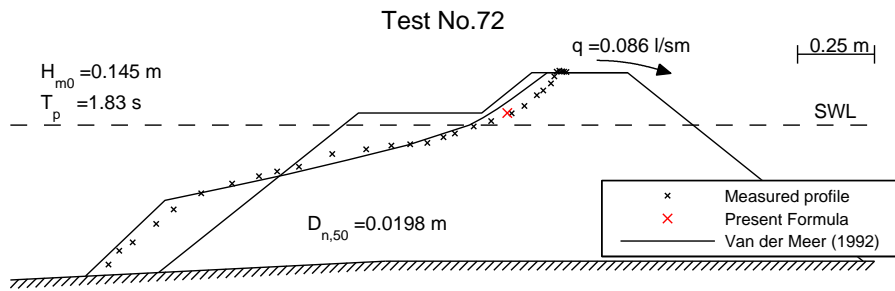
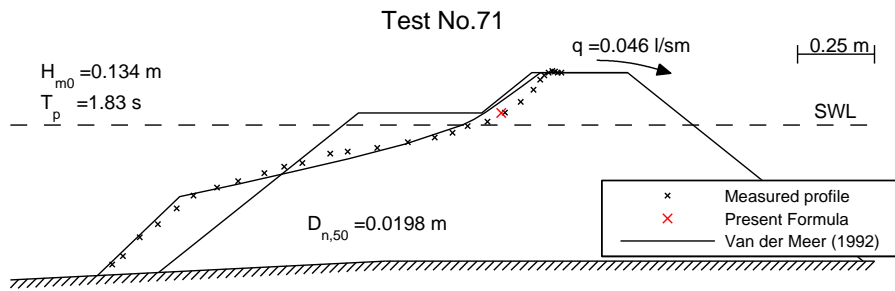
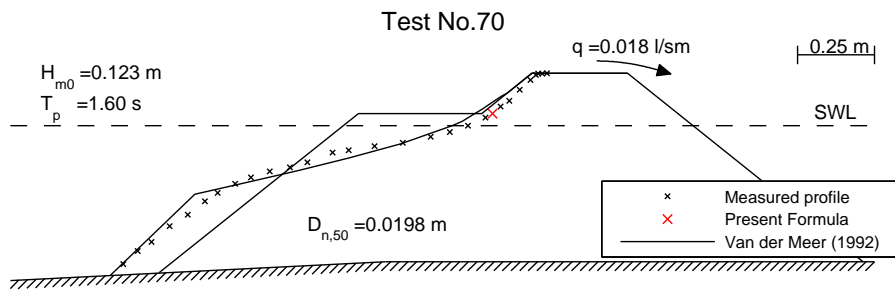


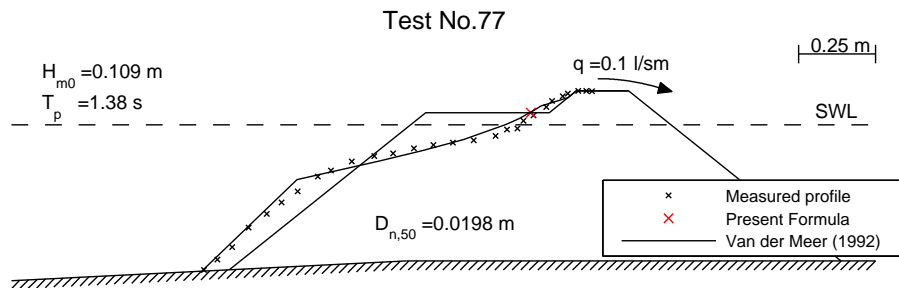
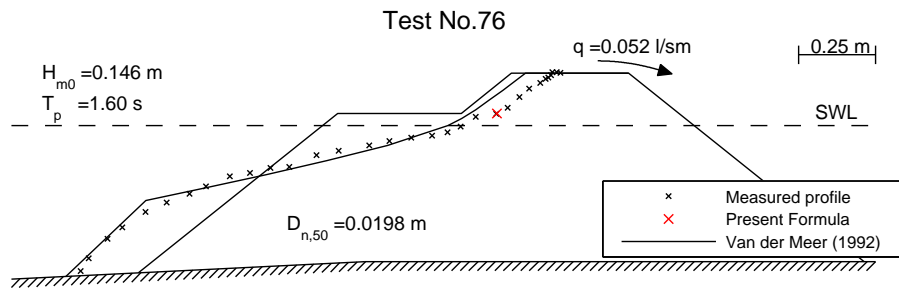
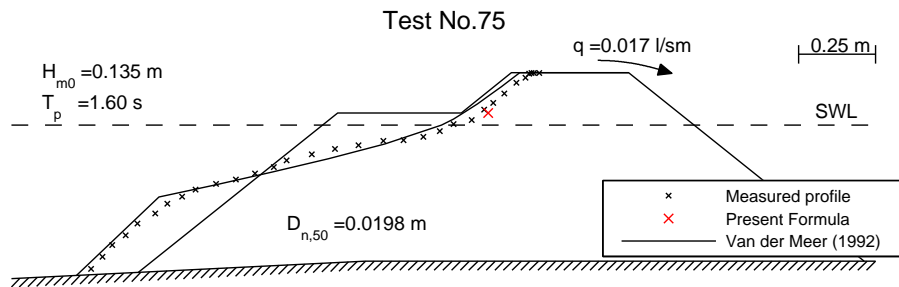
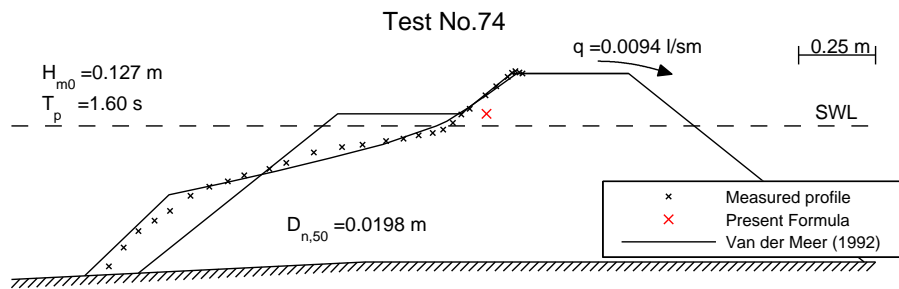
Profile Measurements from Berm Breakwater Tests



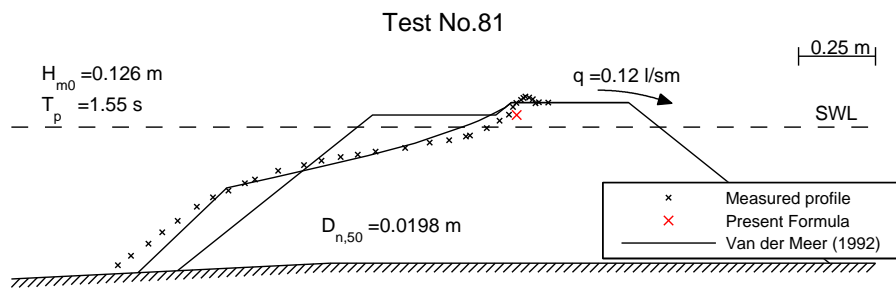
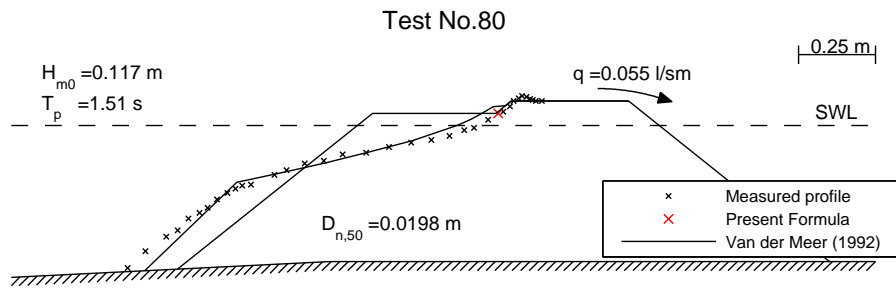
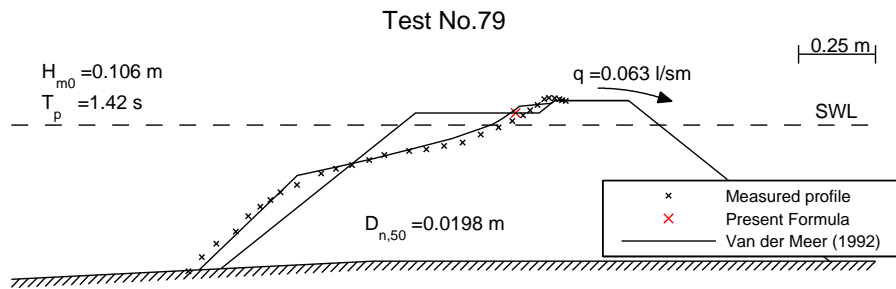
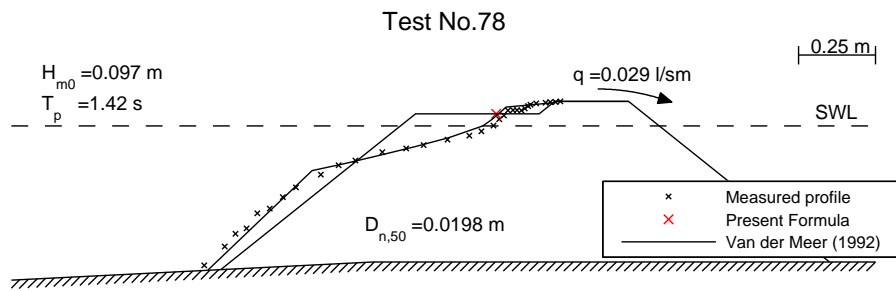


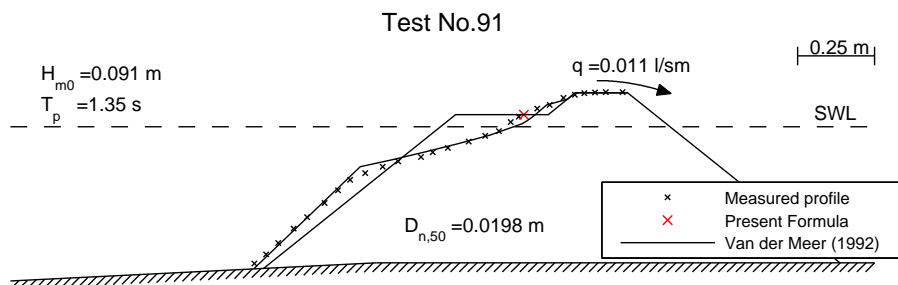
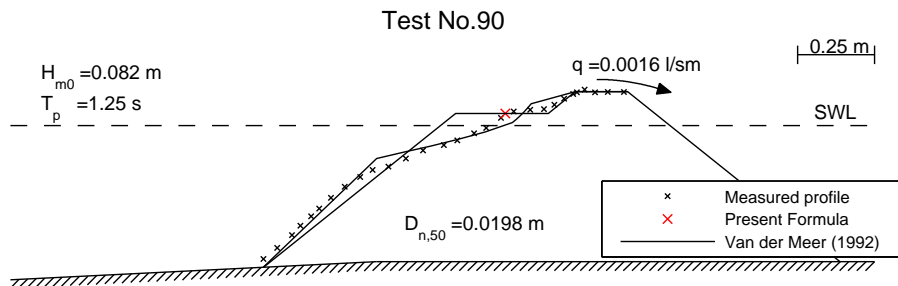
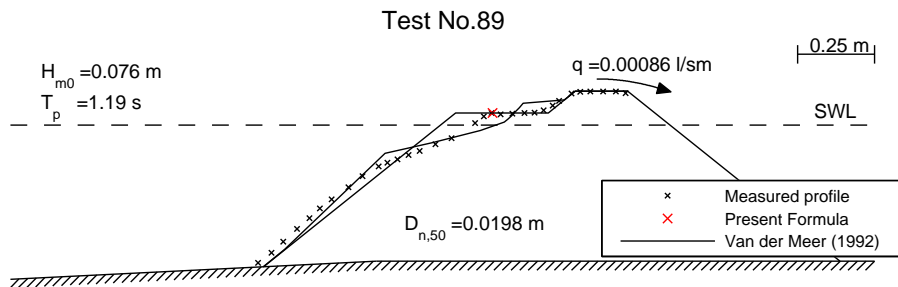
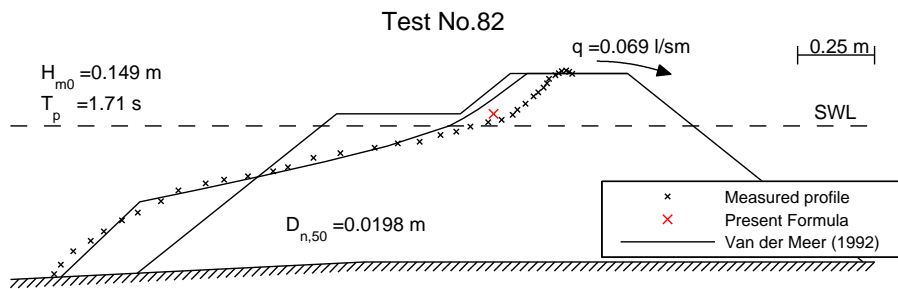
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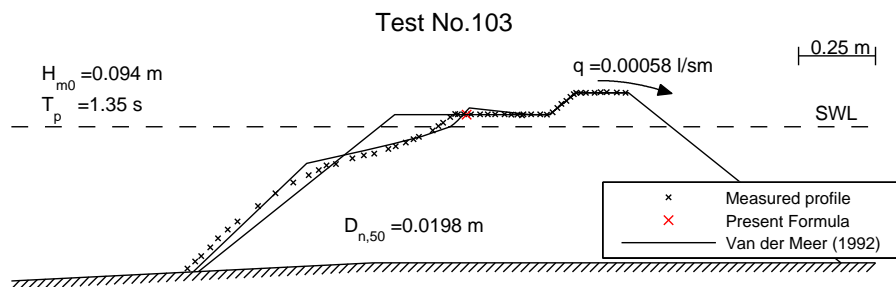
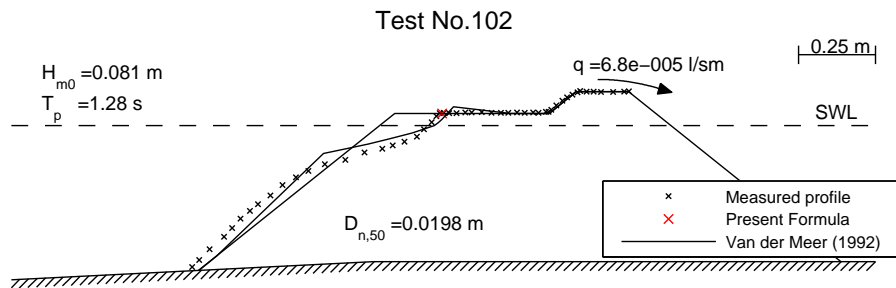
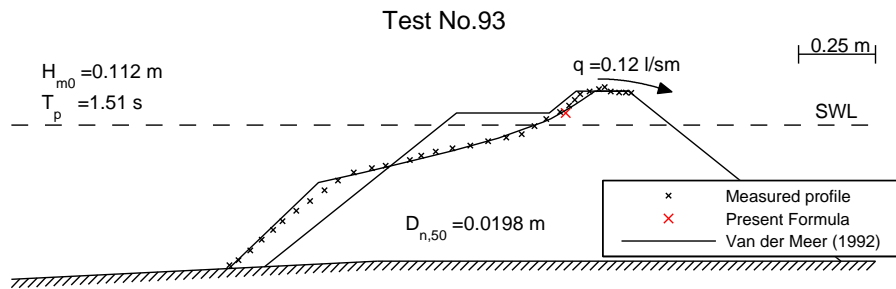
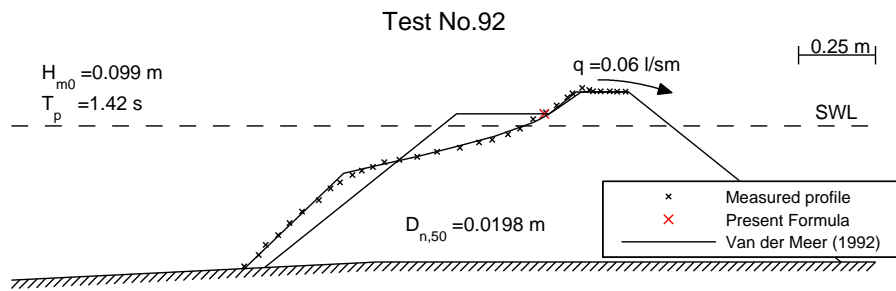


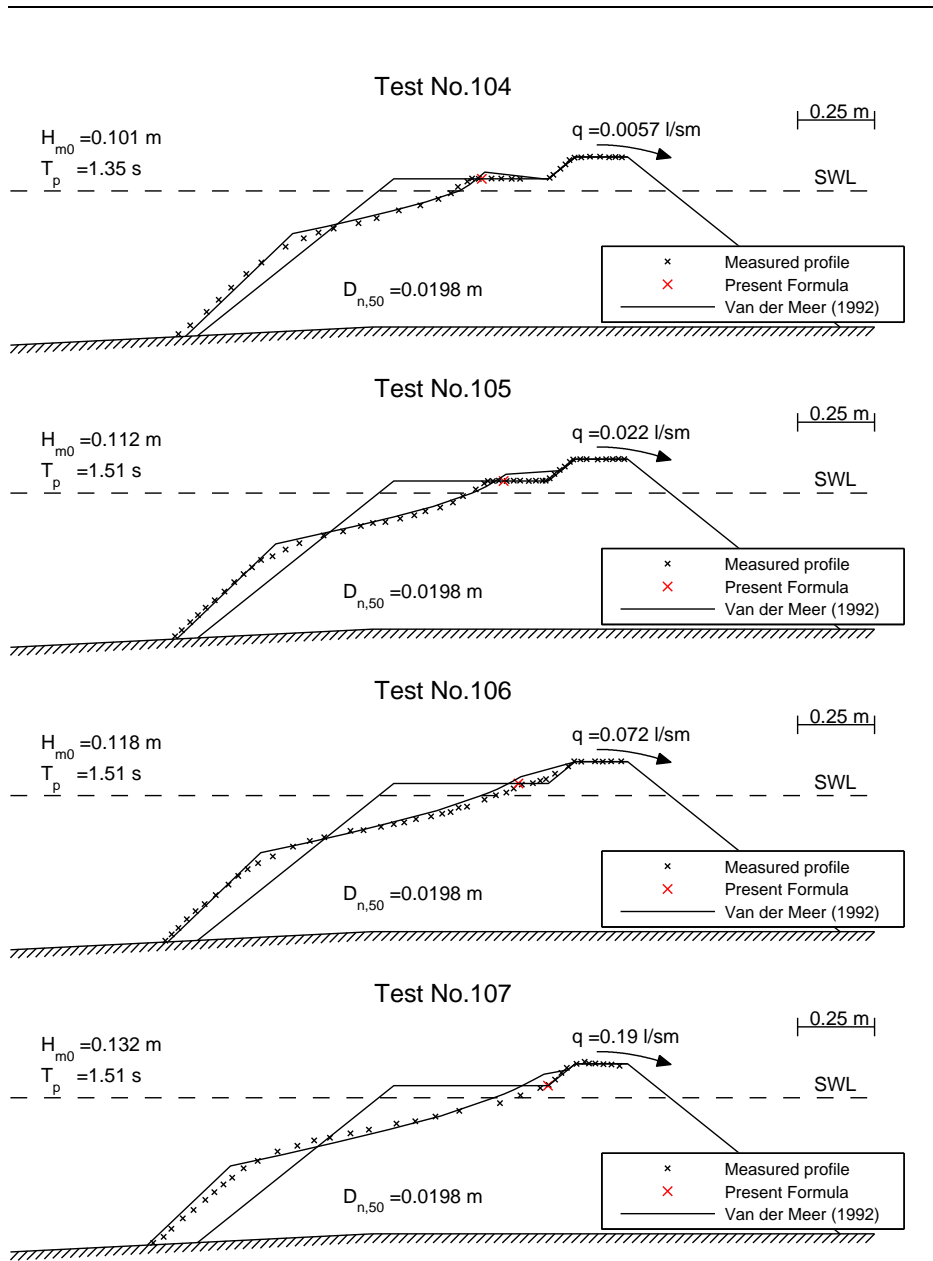
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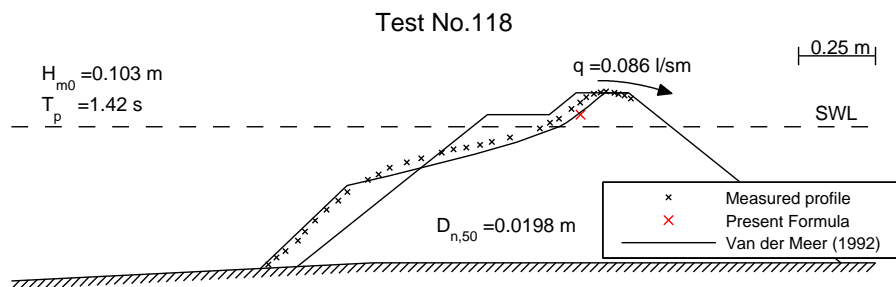
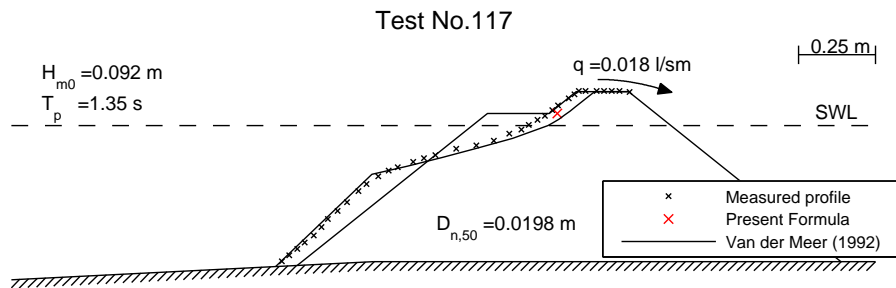
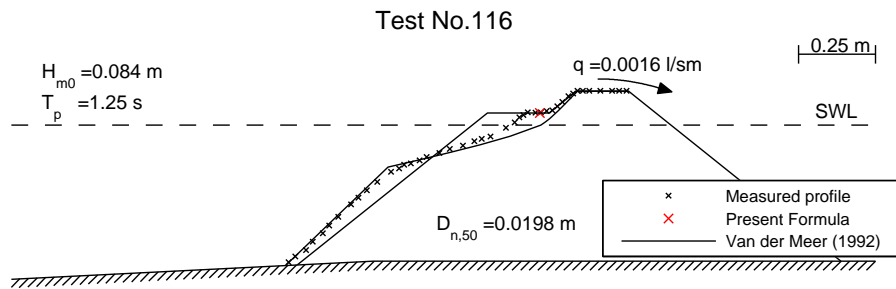
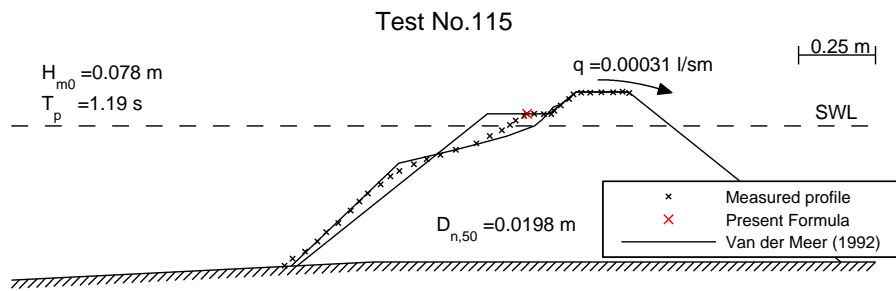


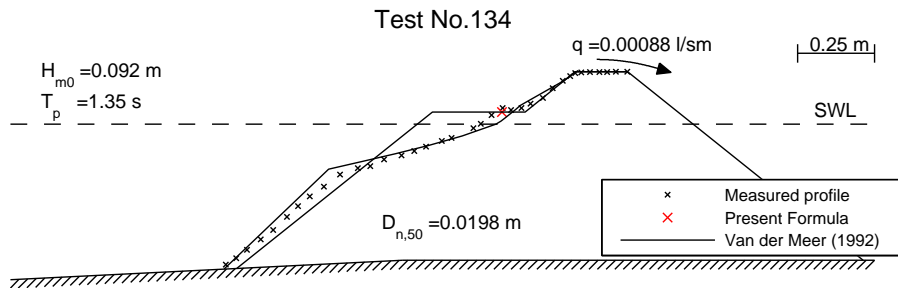
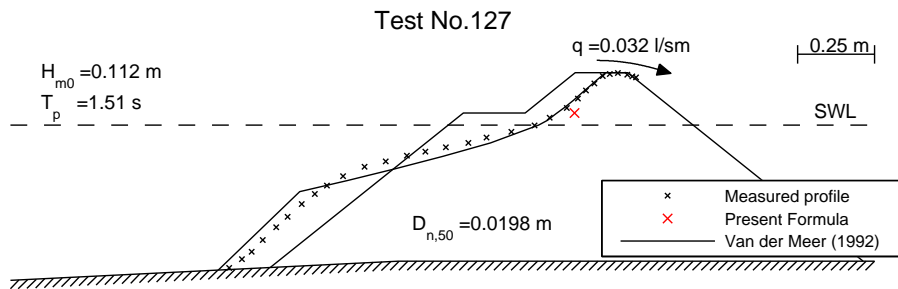
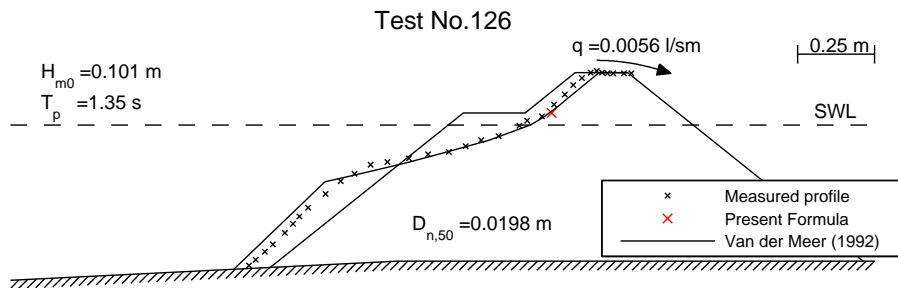
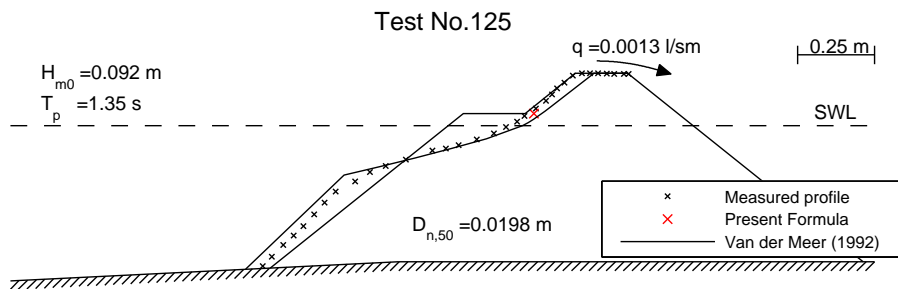
Profile Measurements from Berm Breakwater Tests



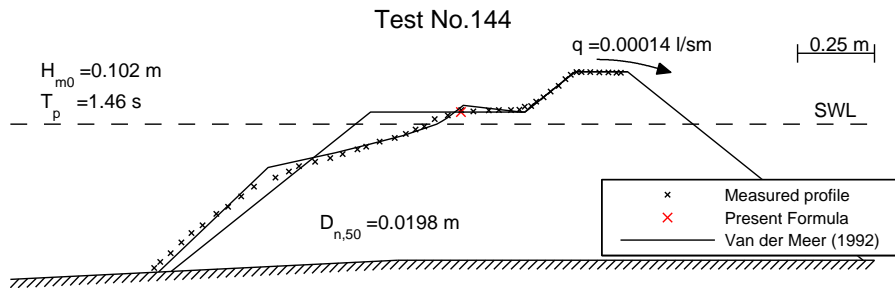
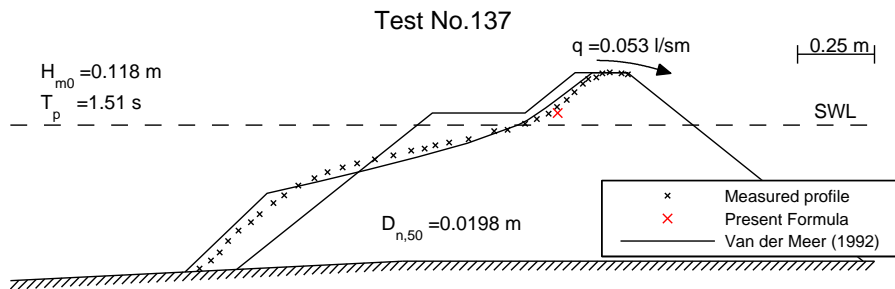
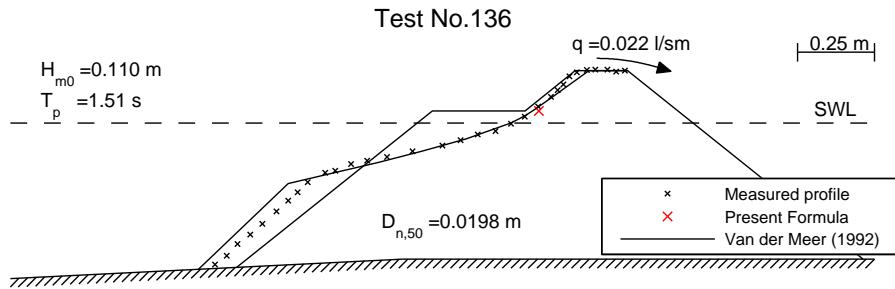
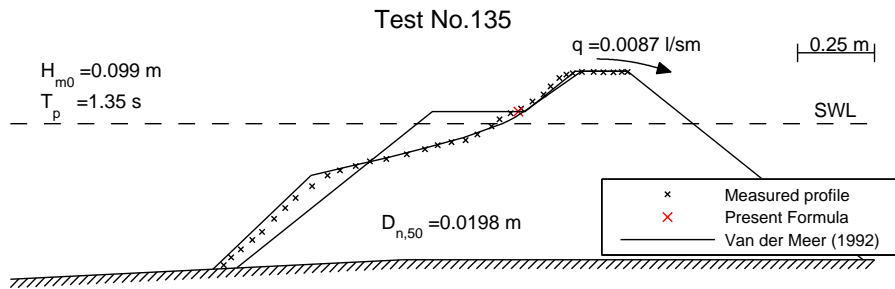


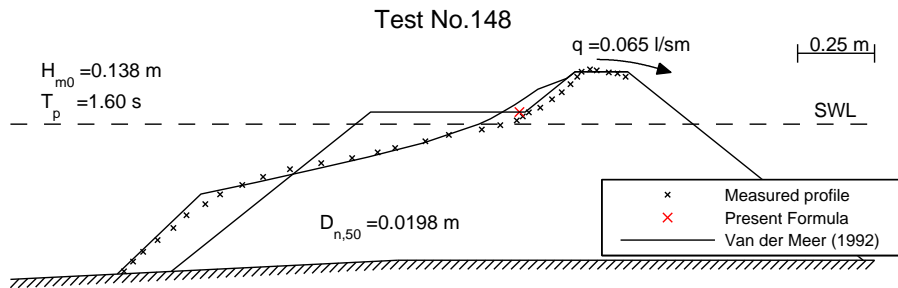
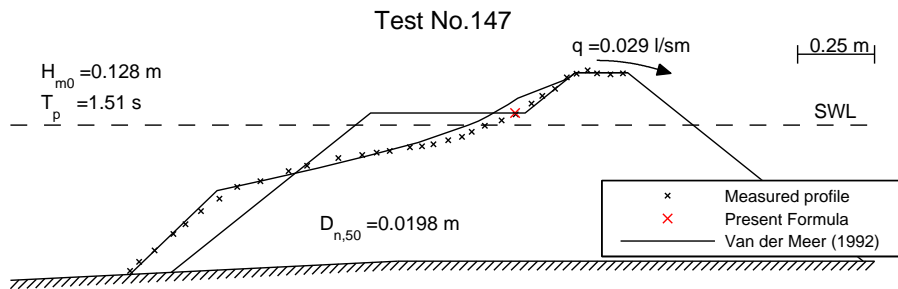
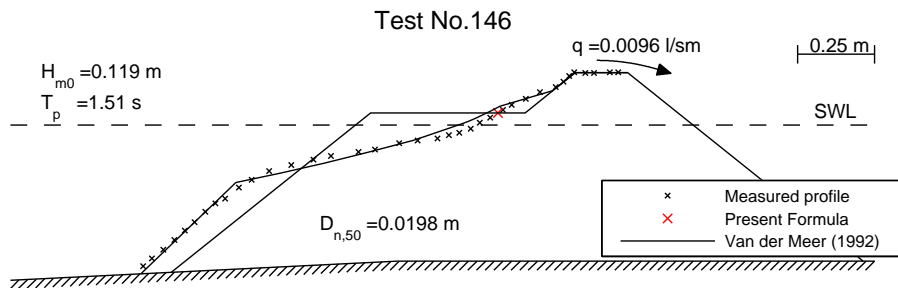
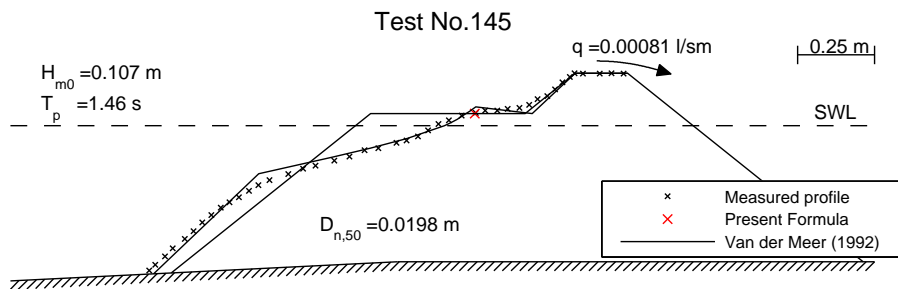
Profile Measurements from Berm Breakwater Tests



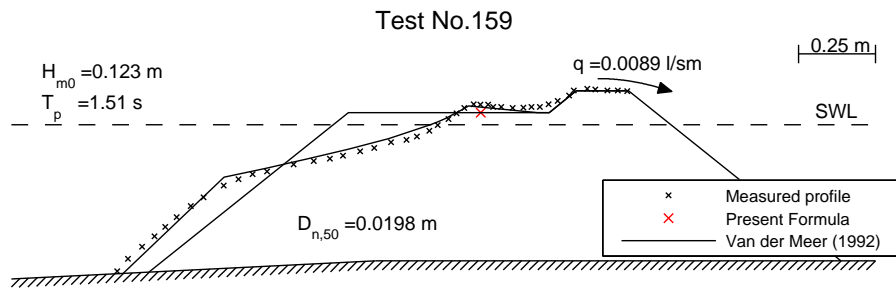
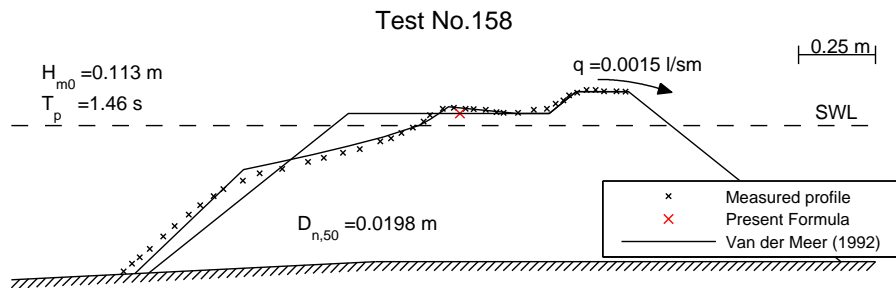
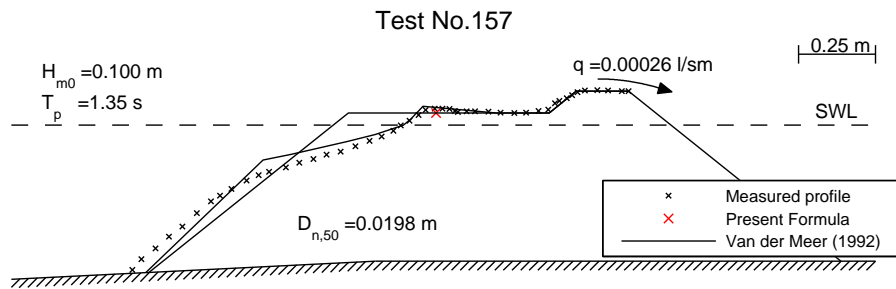
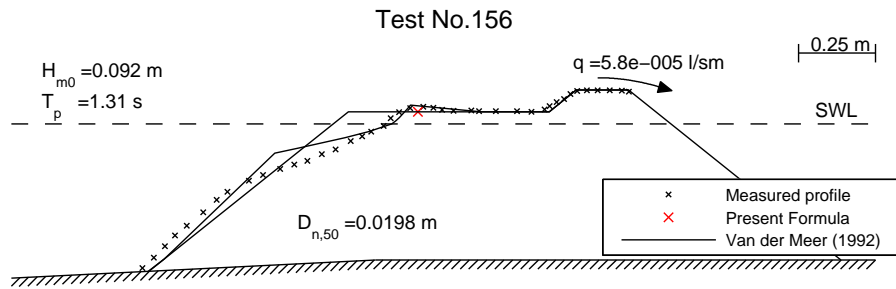


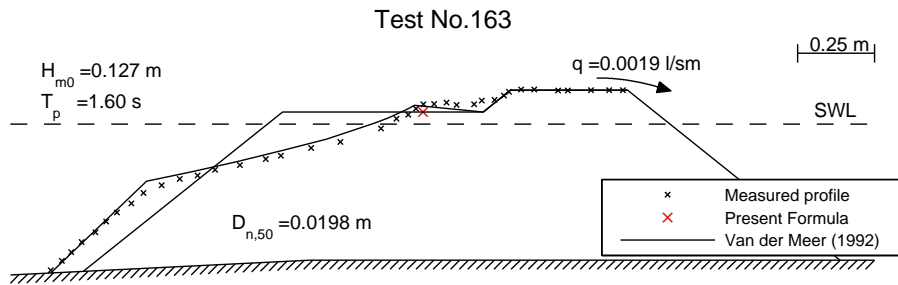
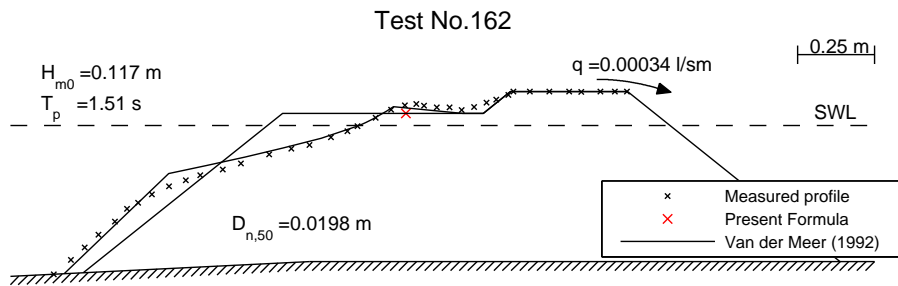
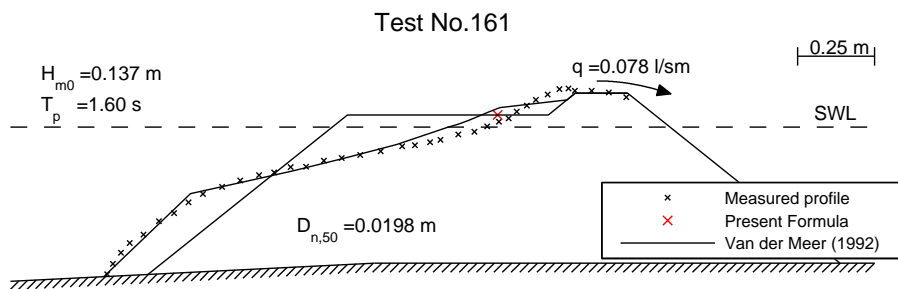
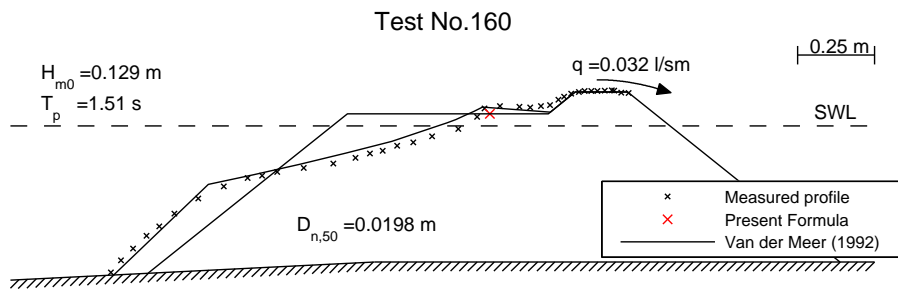
Profile Measurements from Berm Breakwater Tests



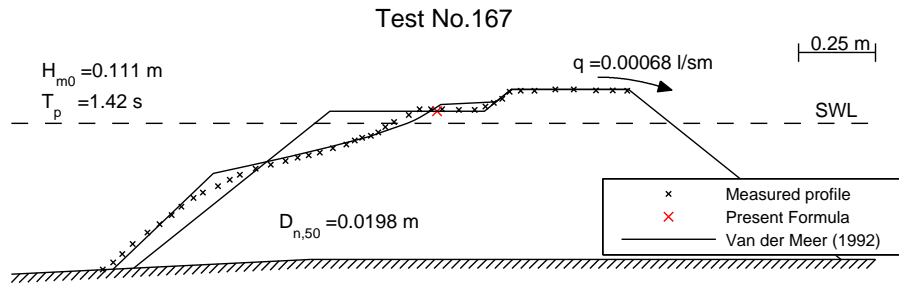
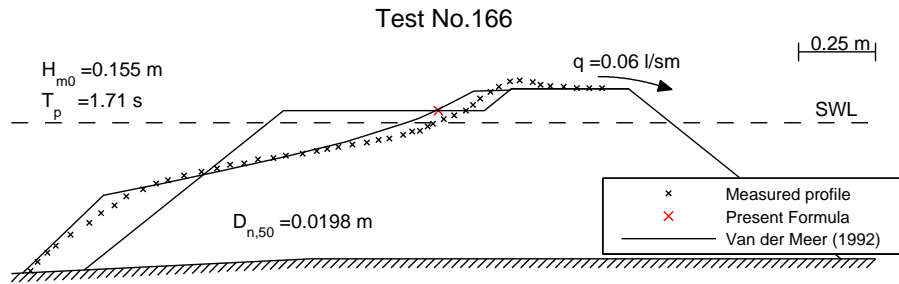
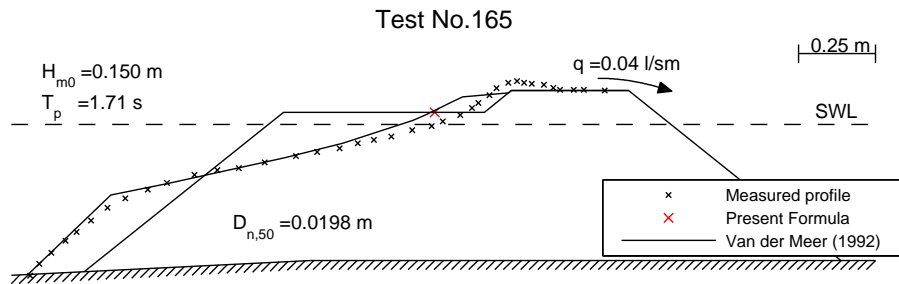
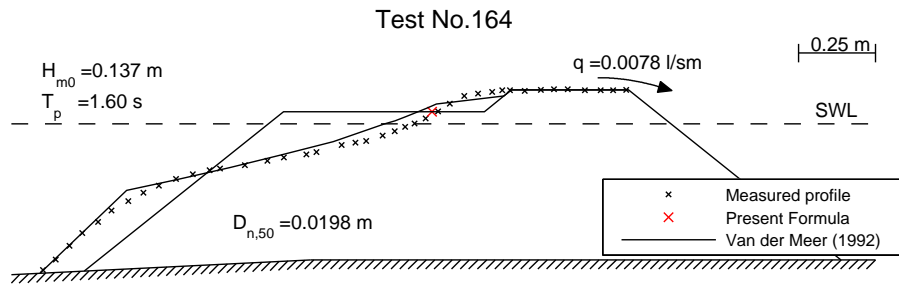


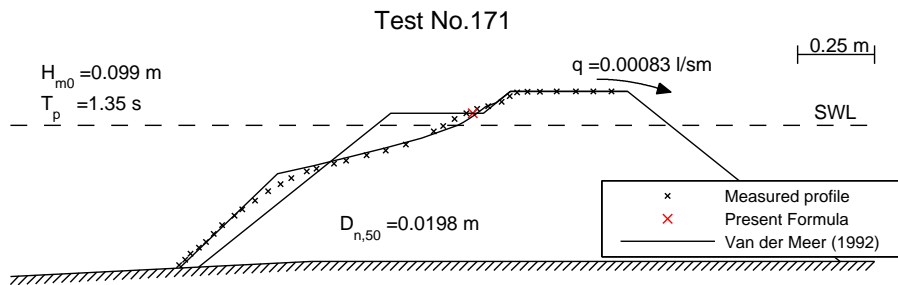
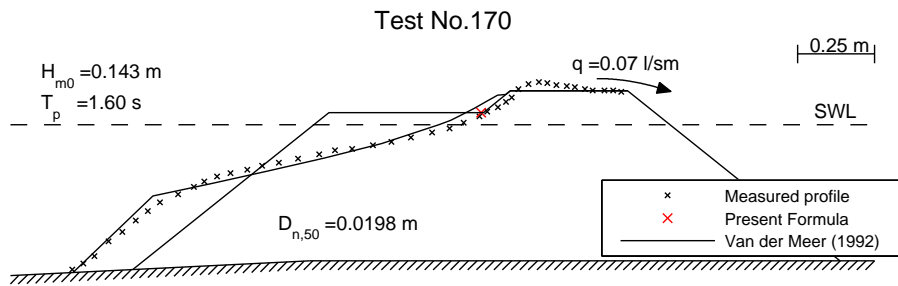
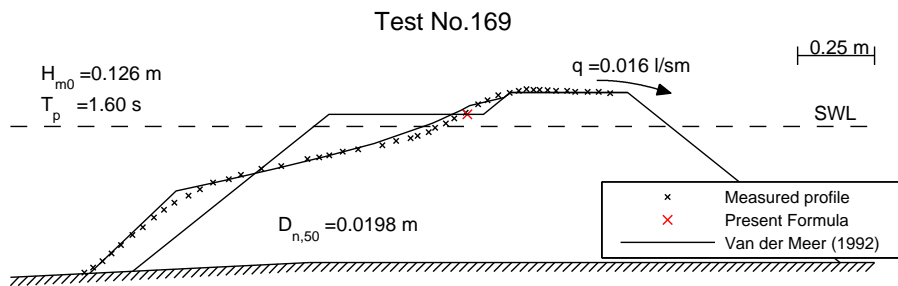
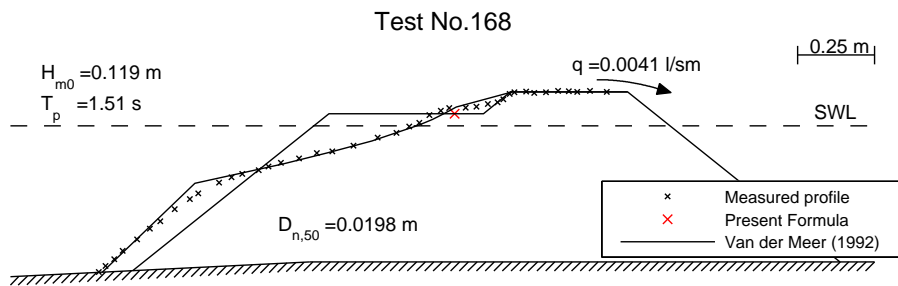
Profile Measurements from Berm Breakwater Tests



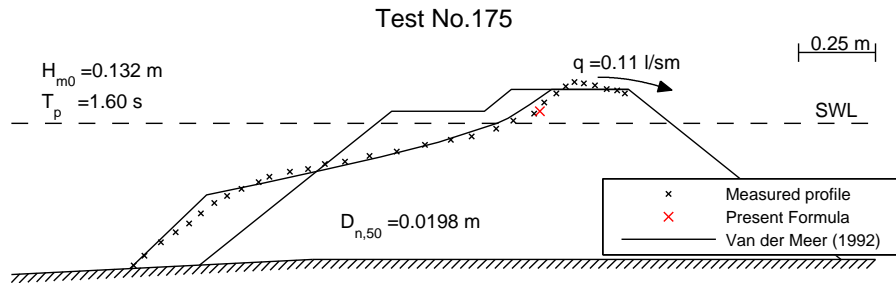
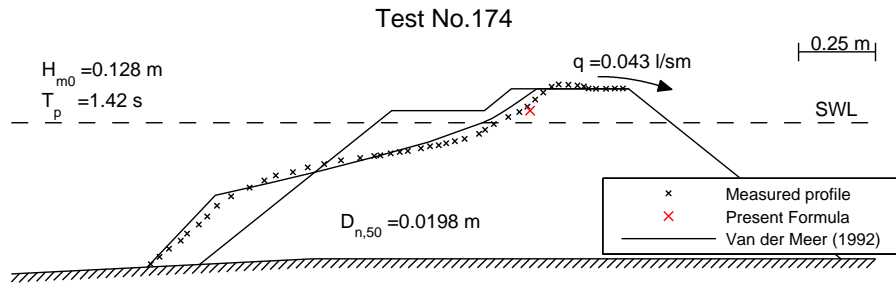
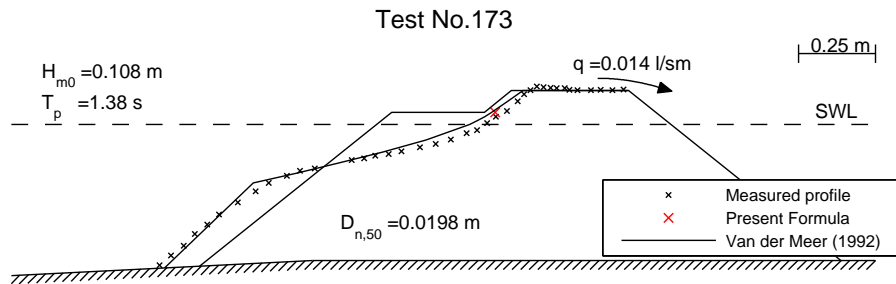
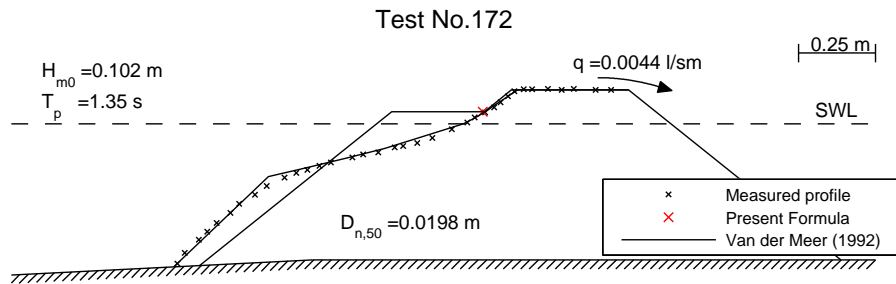


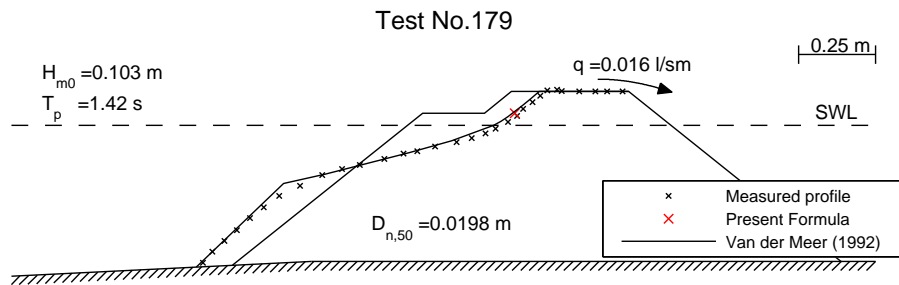
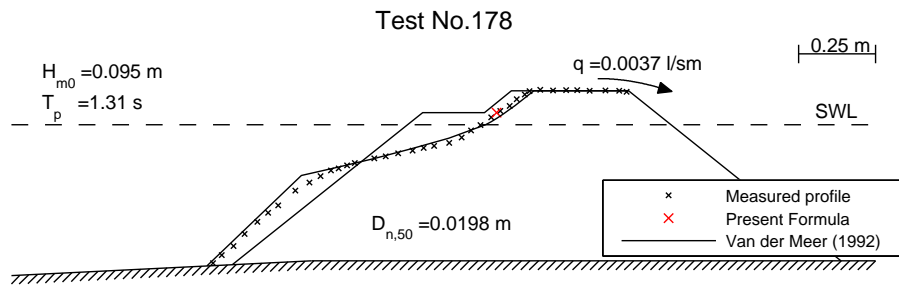
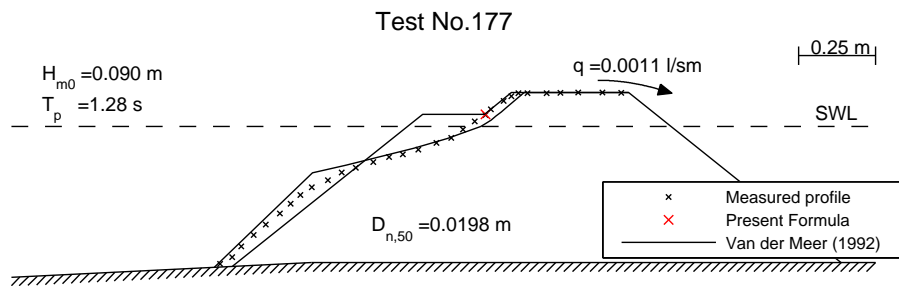
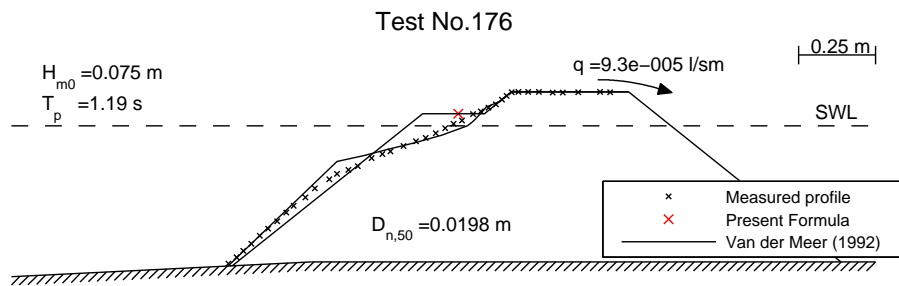
Profile Measurements from Berm Breakwater Tests



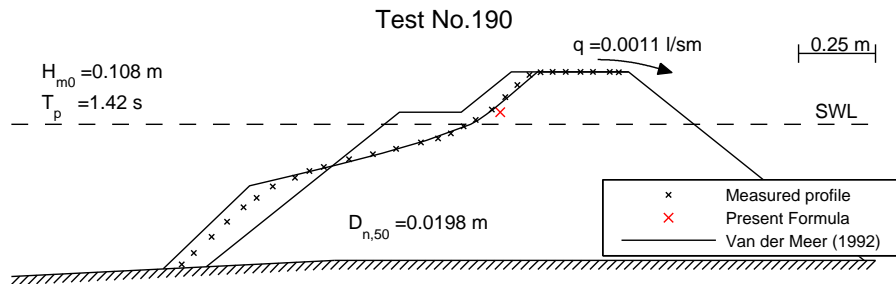
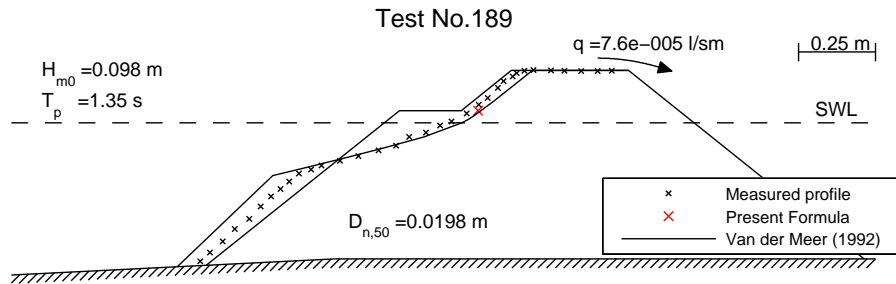
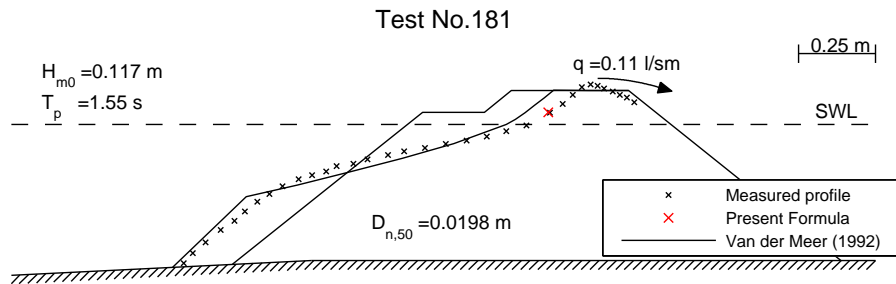
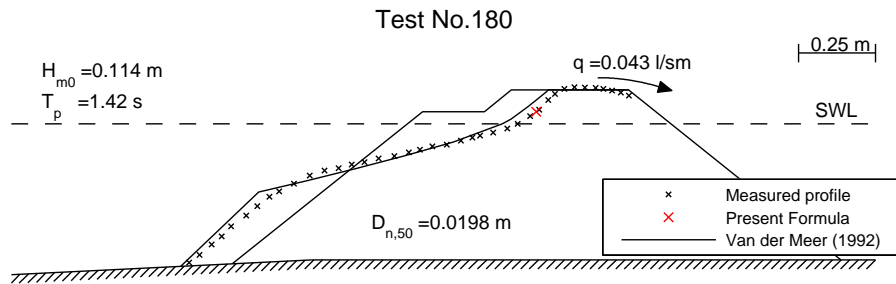


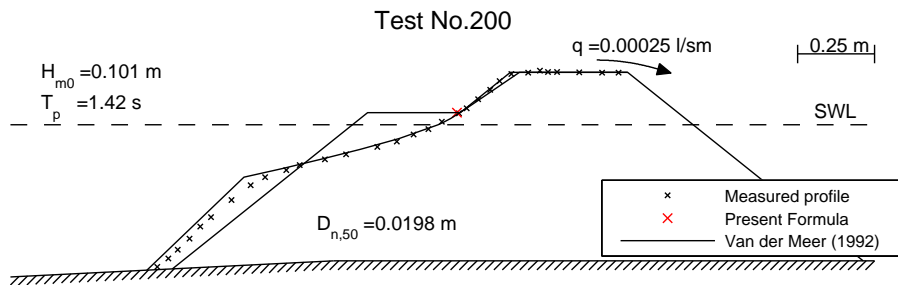
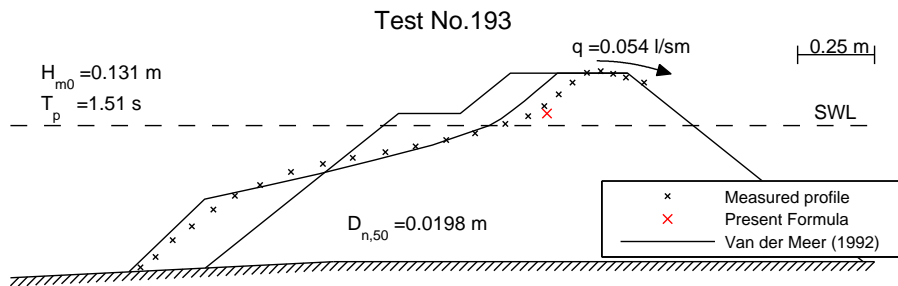
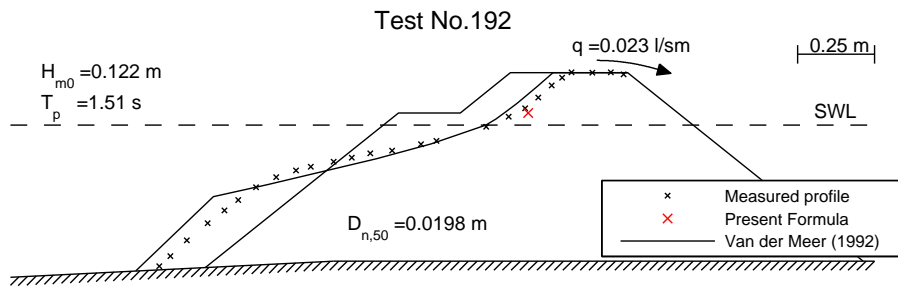
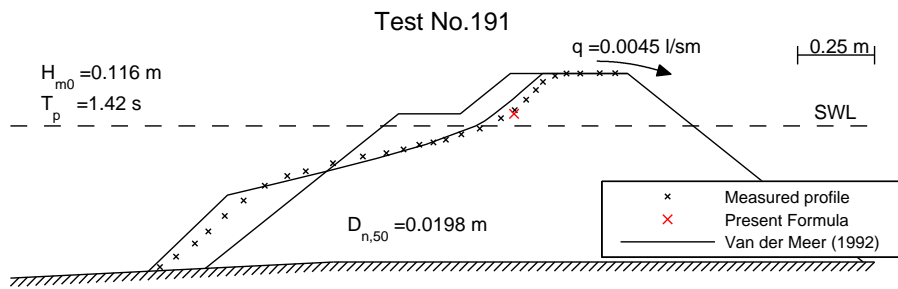
Profile Measurements from Berm Breakwater Tests



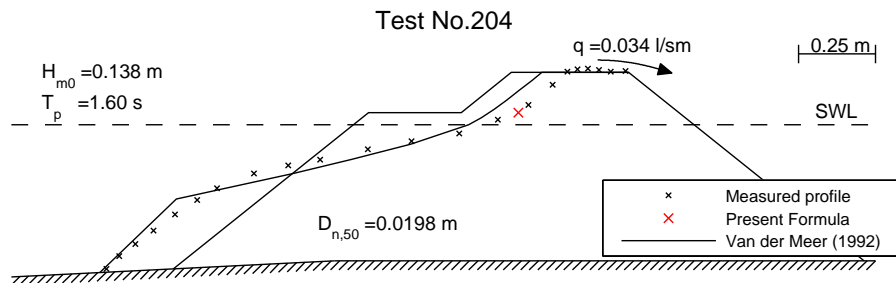
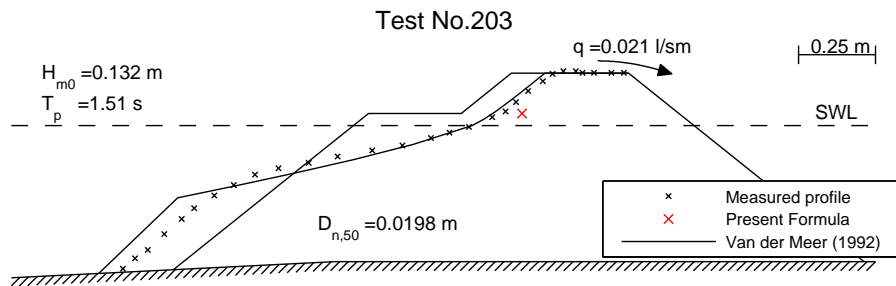
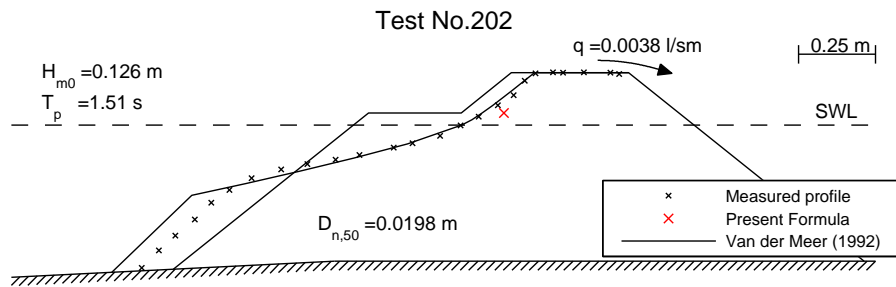
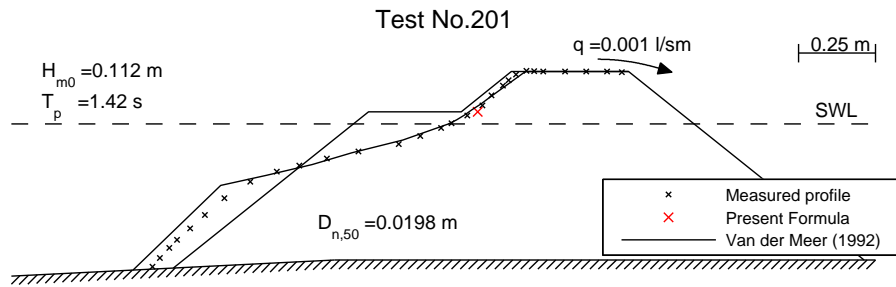


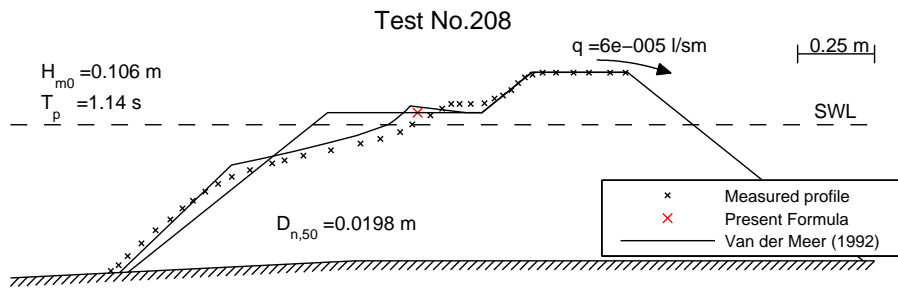
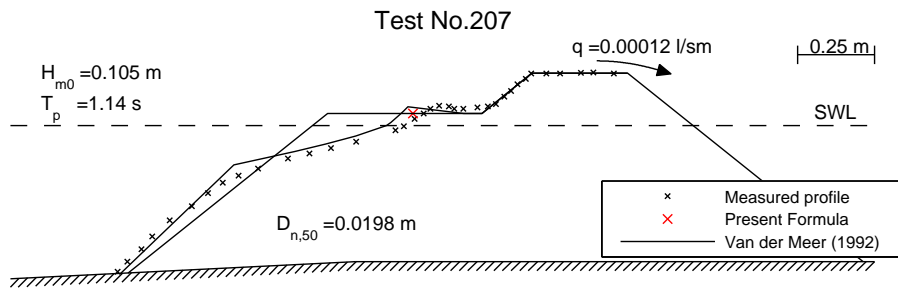
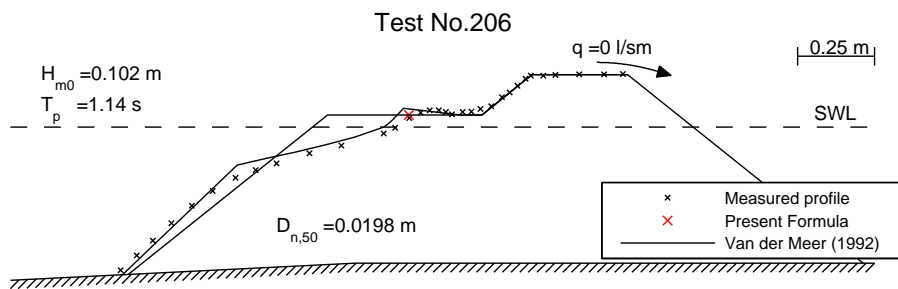
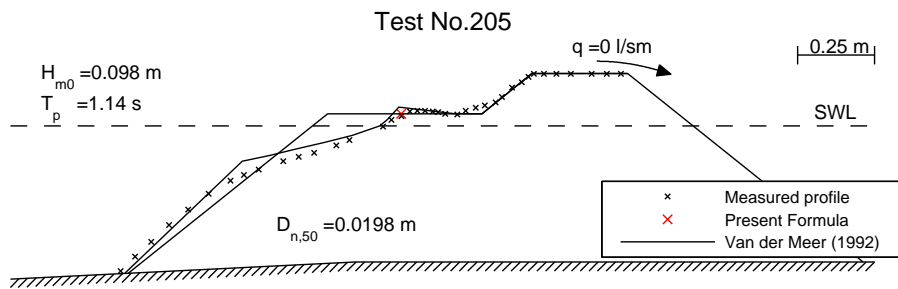
Profile Measurements from Berm Breakwater Tests



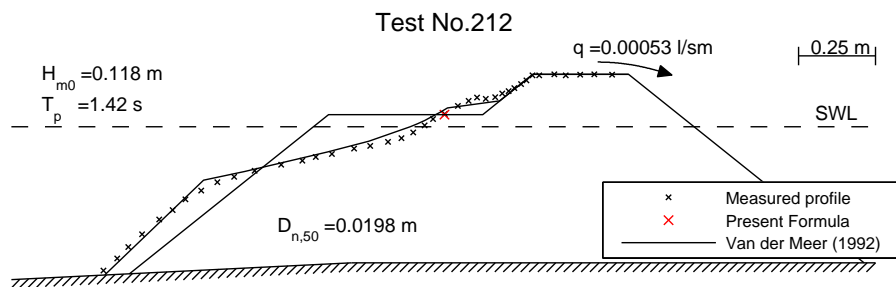
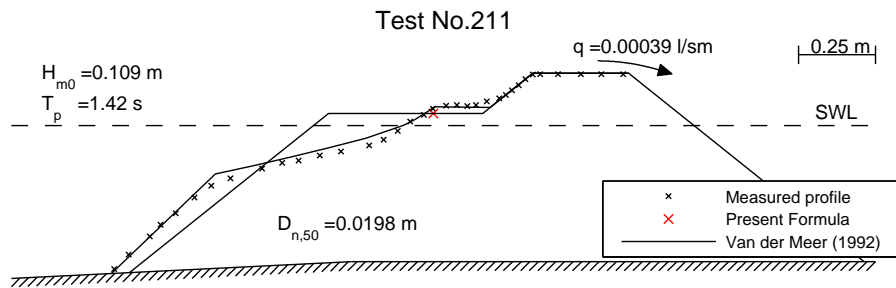
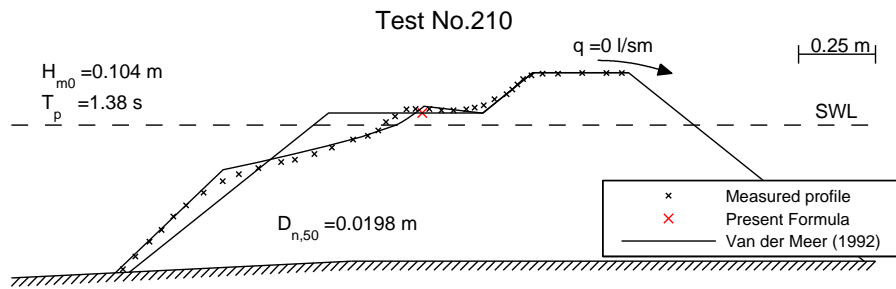
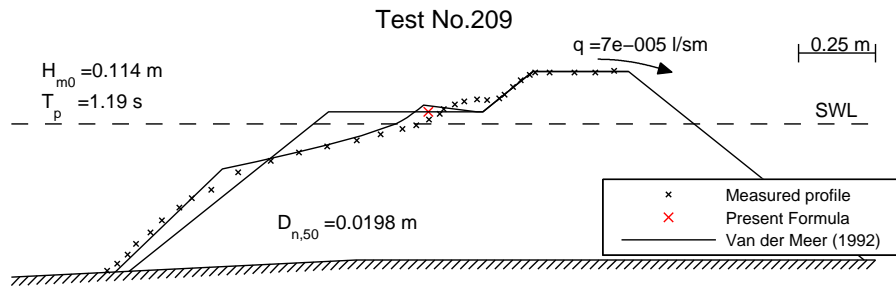


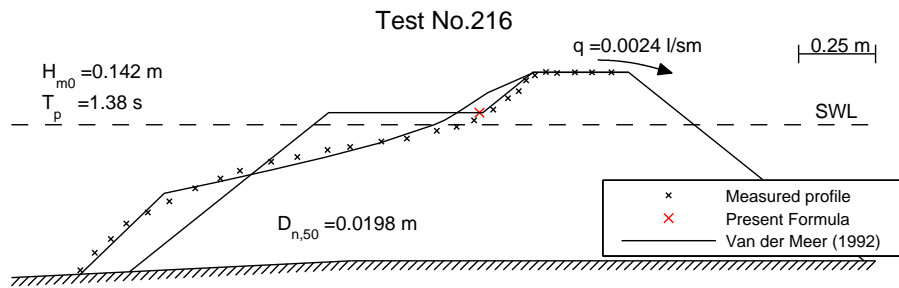
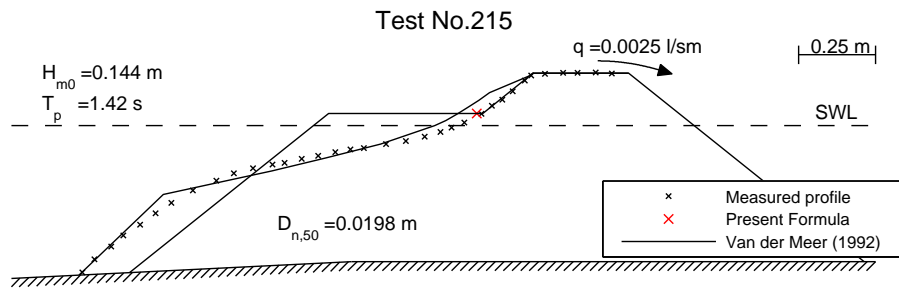
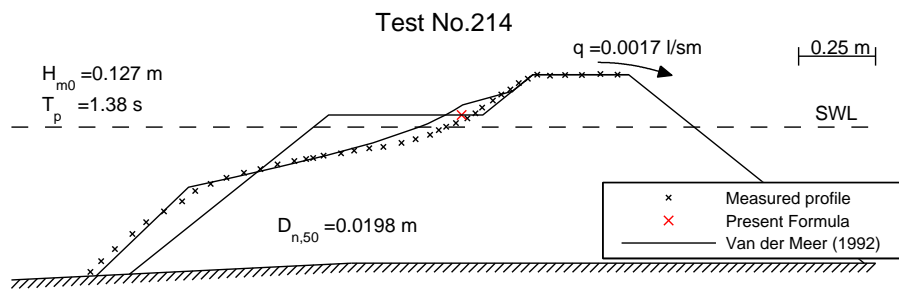
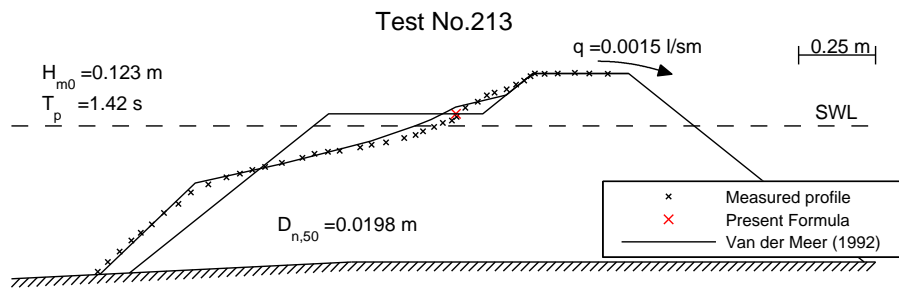
Profile Measurements from Berm Breakwater Tests



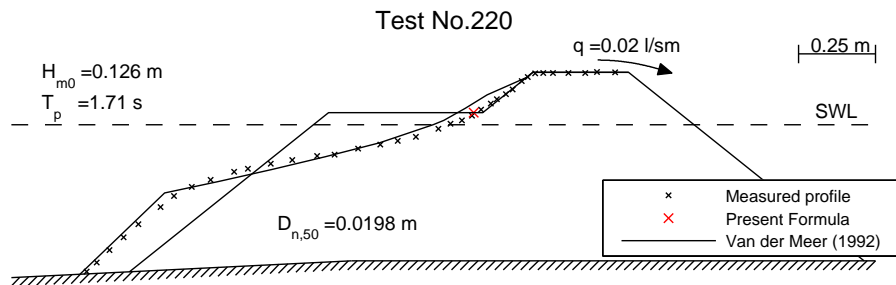
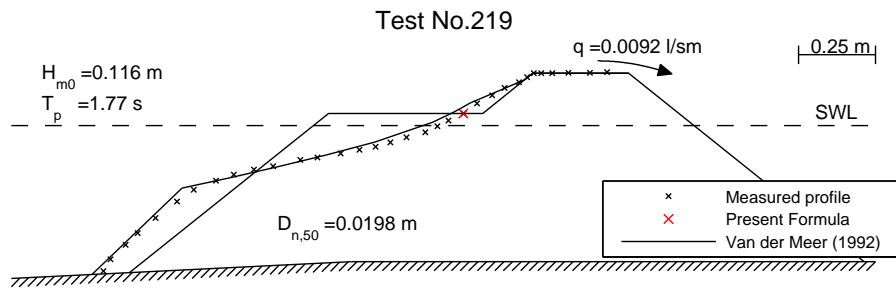
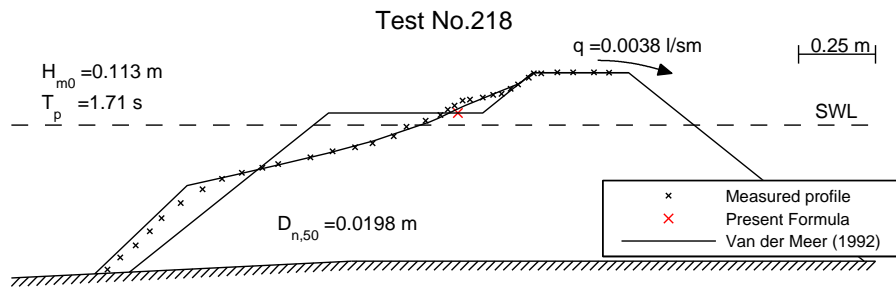
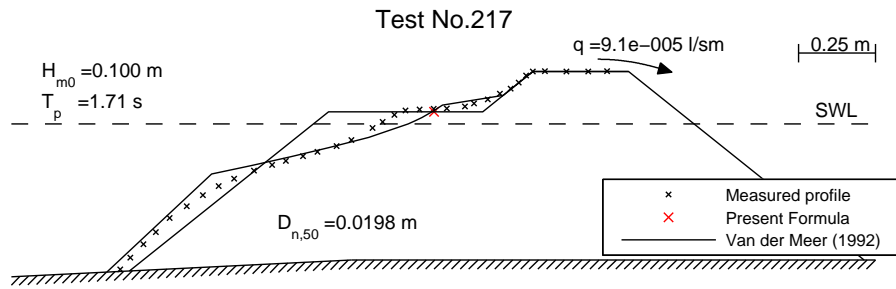


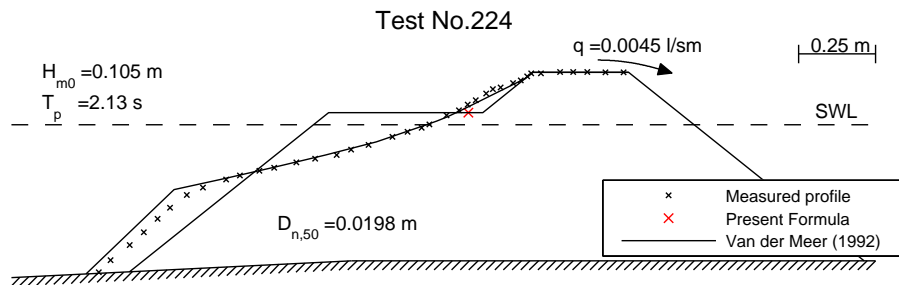
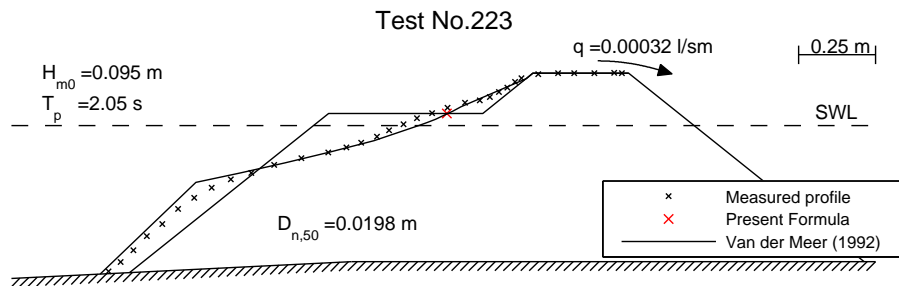
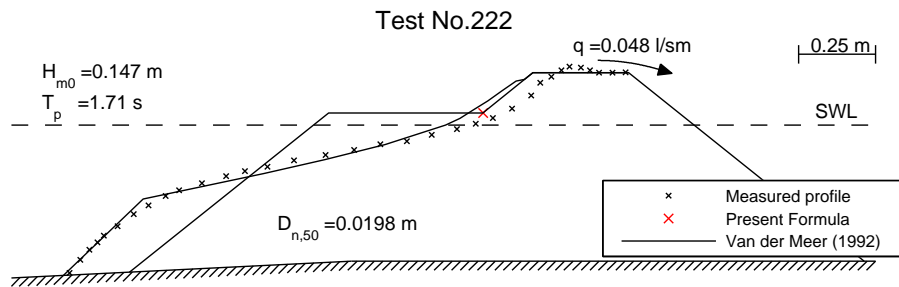
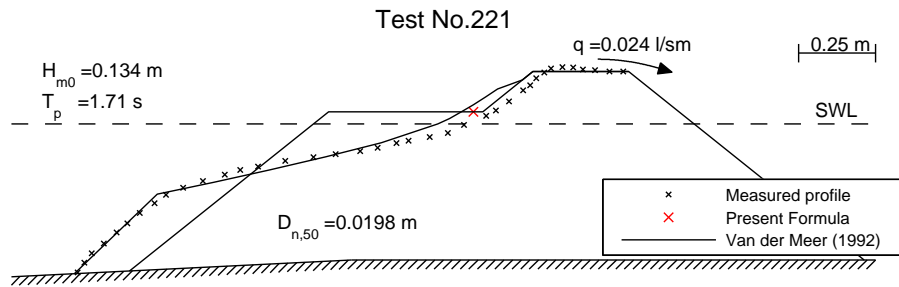
Profile Measurements from Berm Breakwater Tests



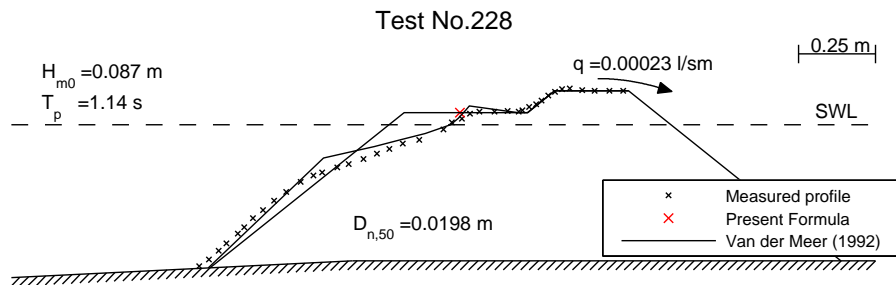
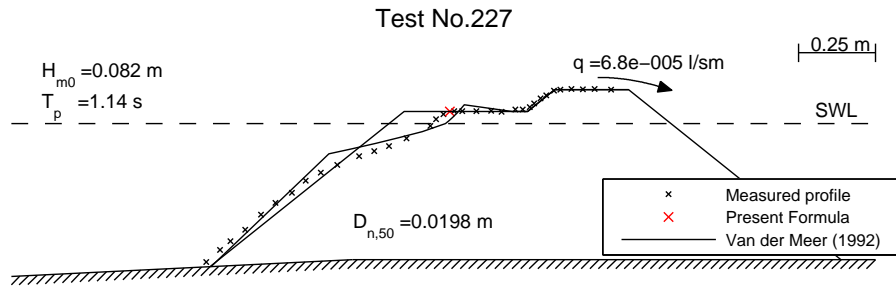
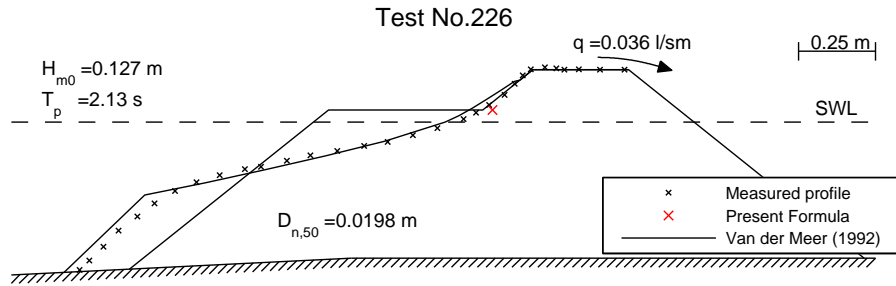
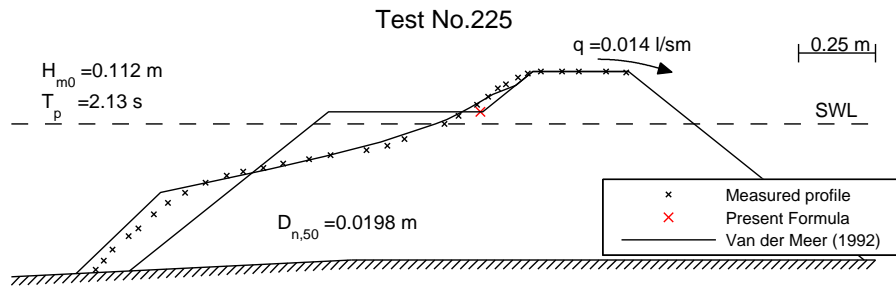


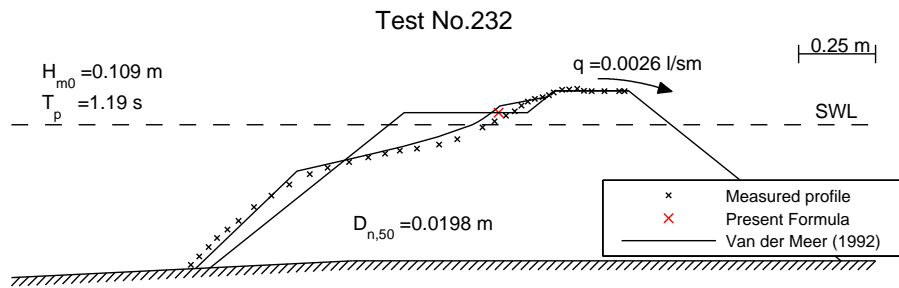
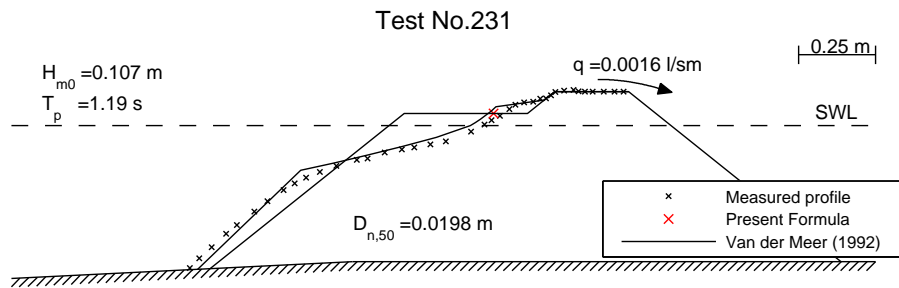
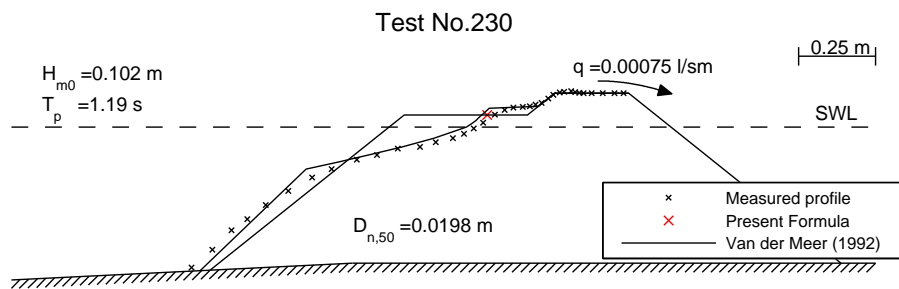
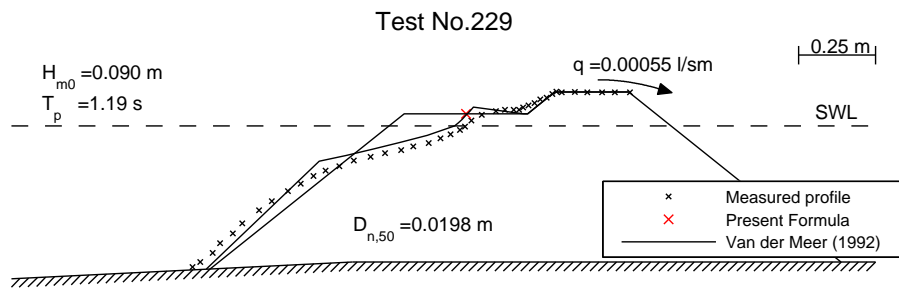
Profile Measurements from Berm Breakwater Tests



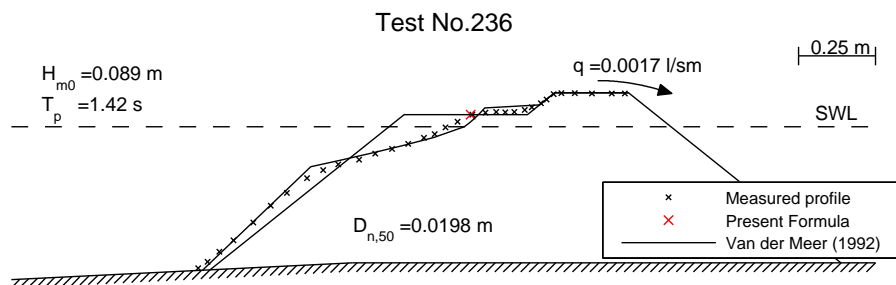
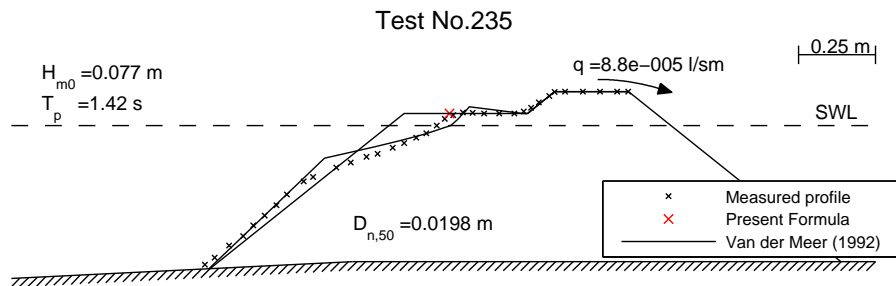
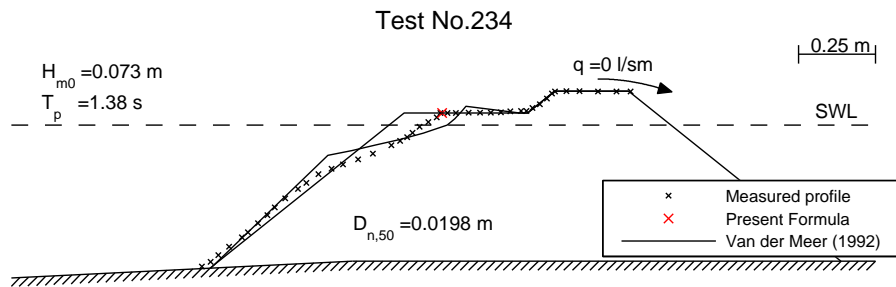
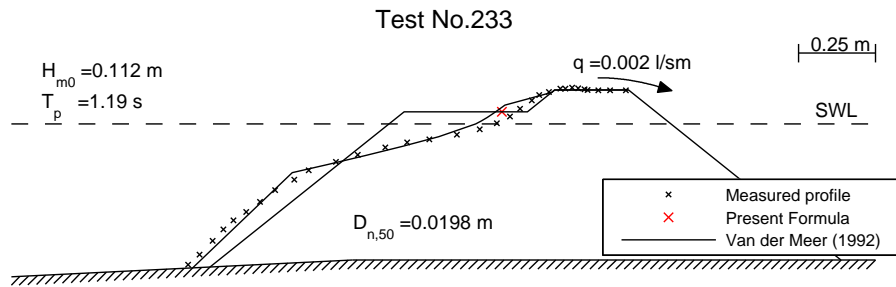


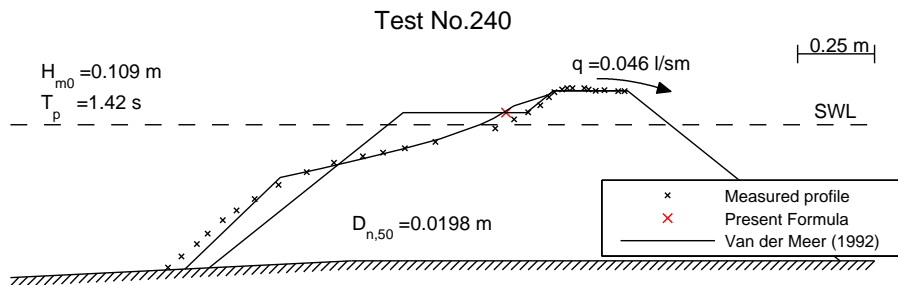
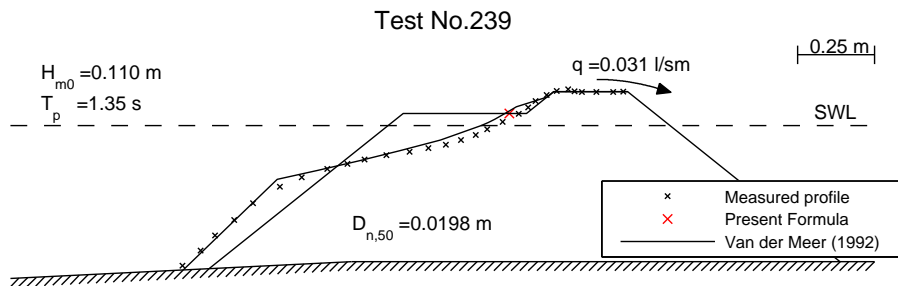
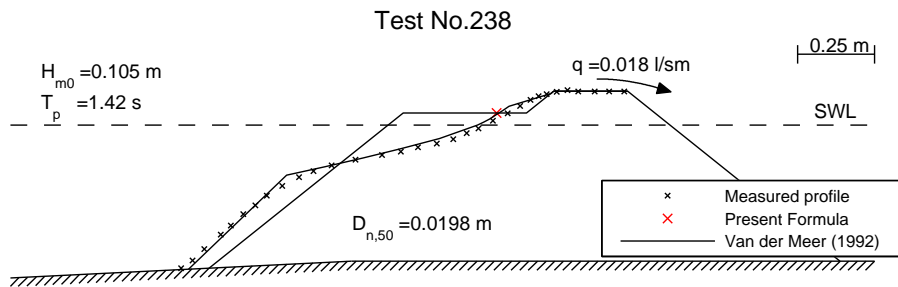
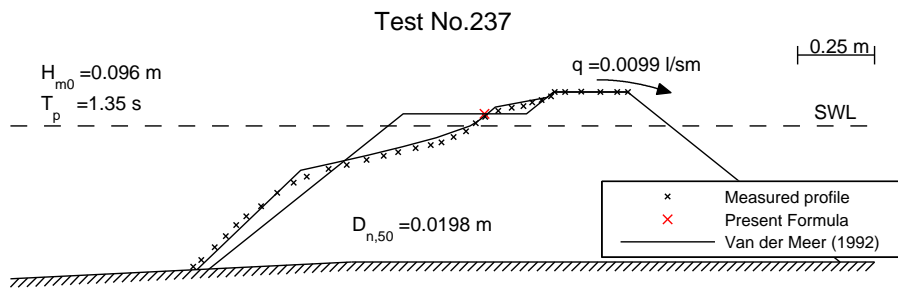
Profile Measurements from Berm Breakwater Tests



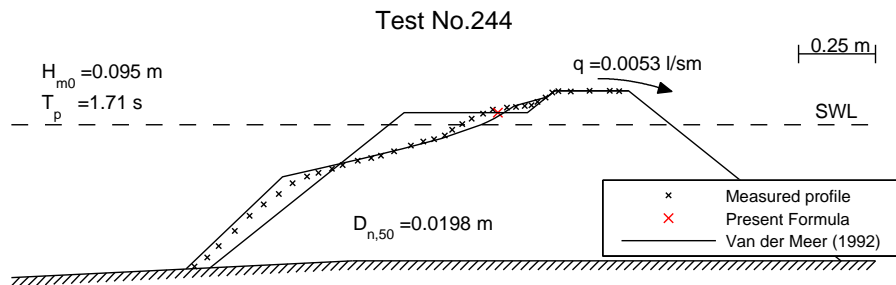
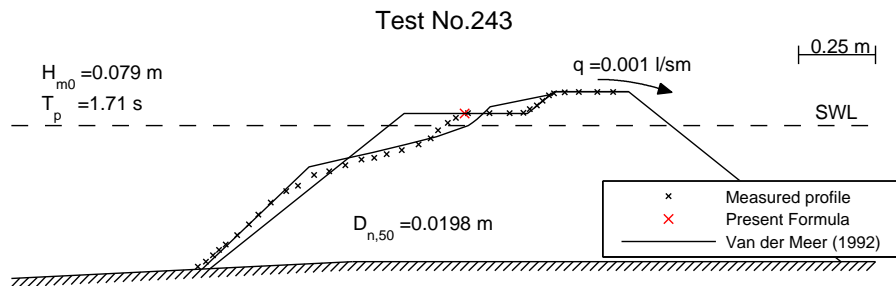
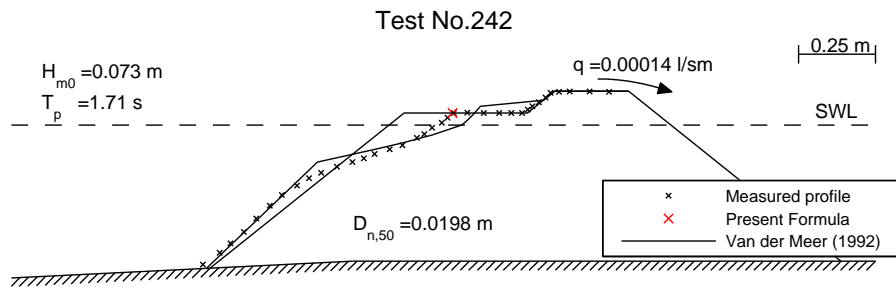
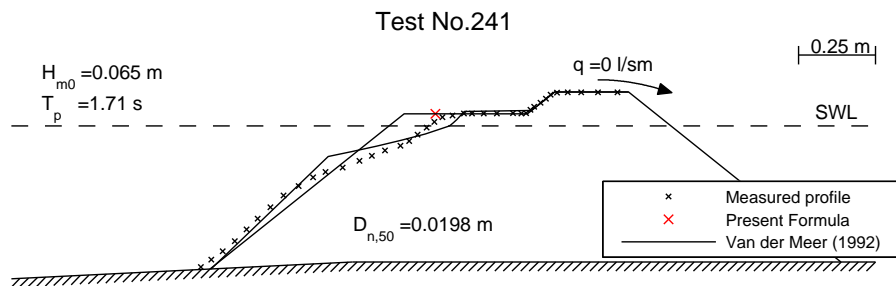


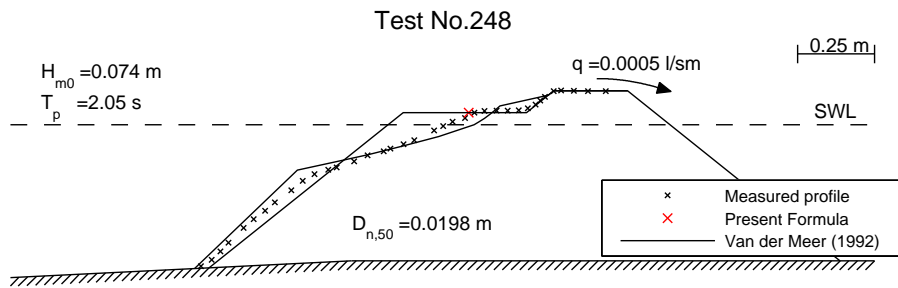
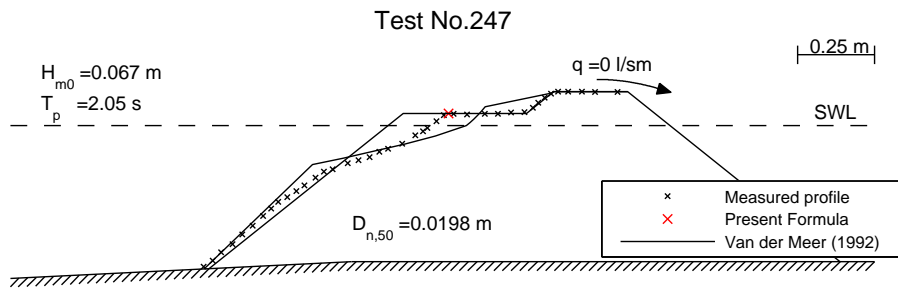
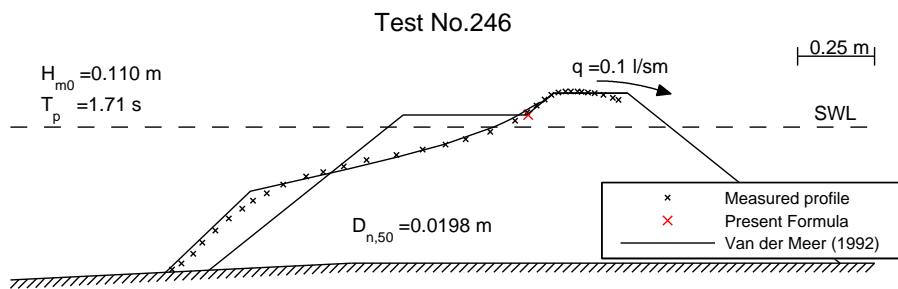
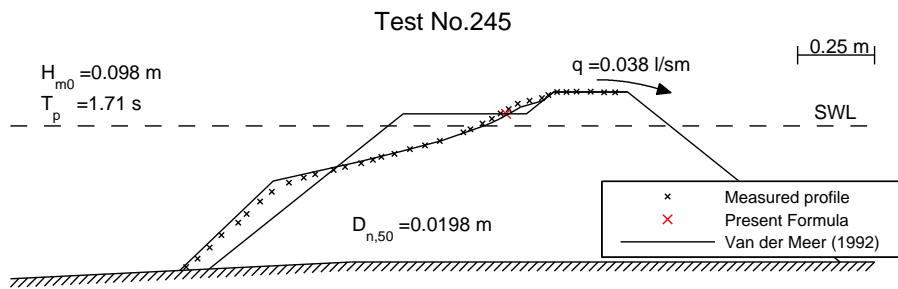
Profile Measurements from Berm Breakwater Tests



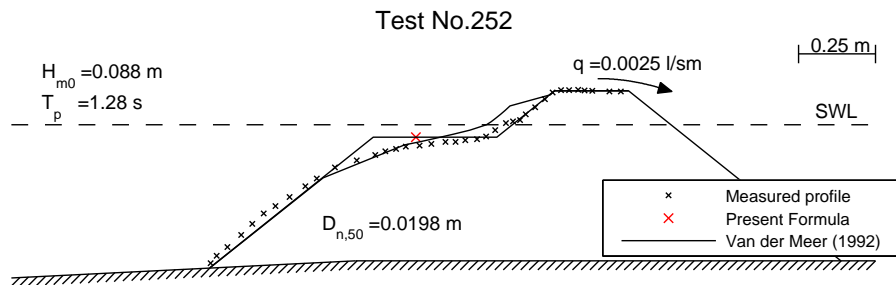
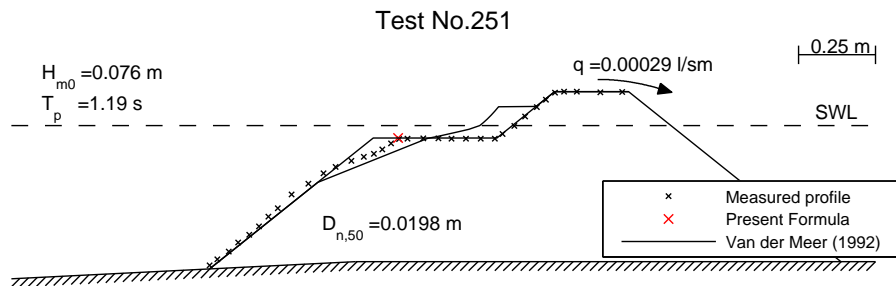
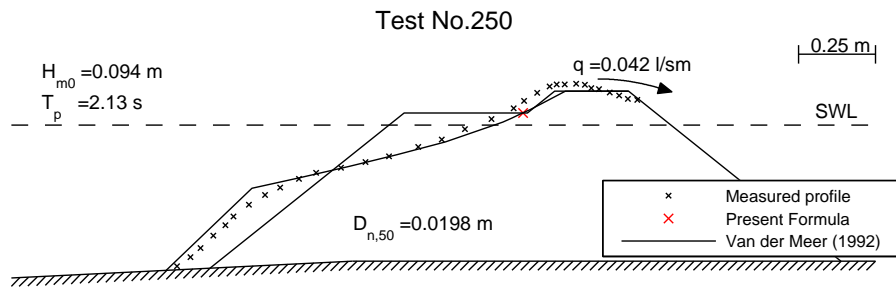
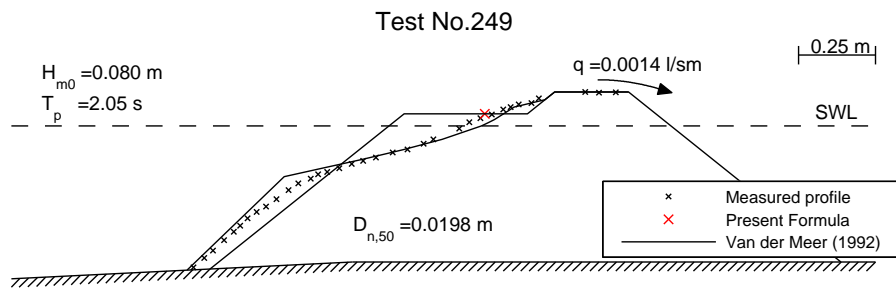


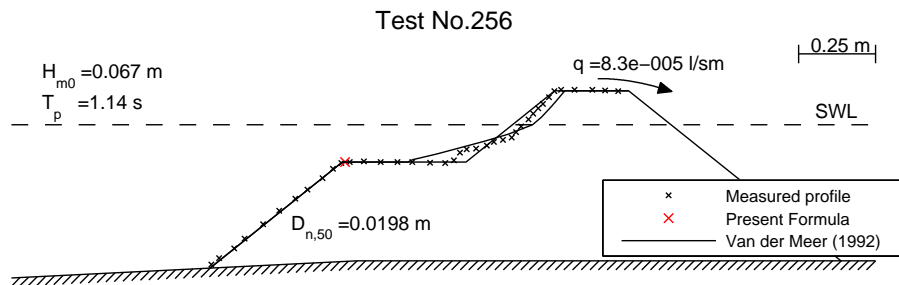
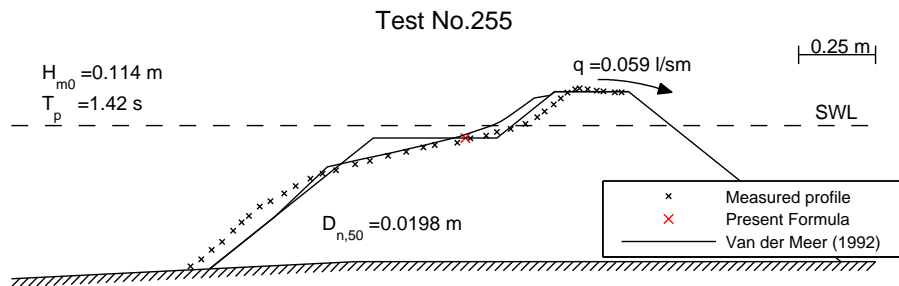
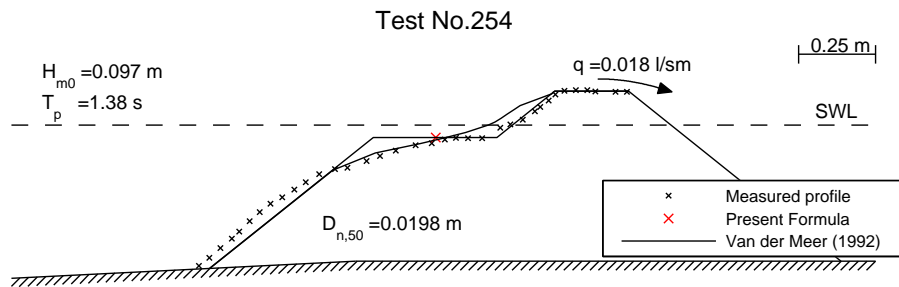
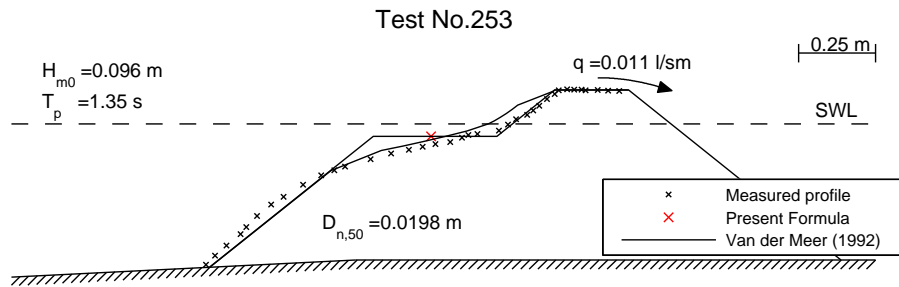
Profile Measurements from Berm Breakwater Tests



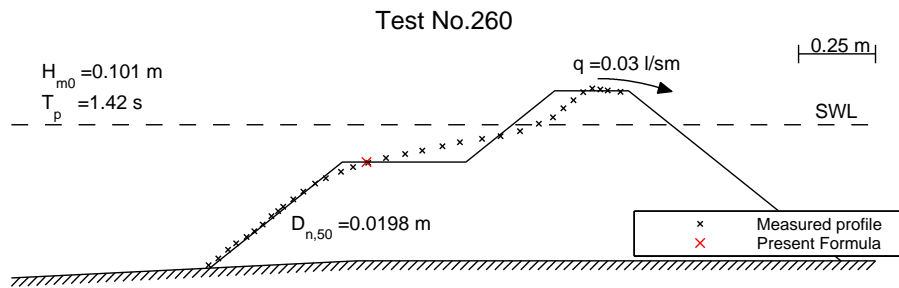
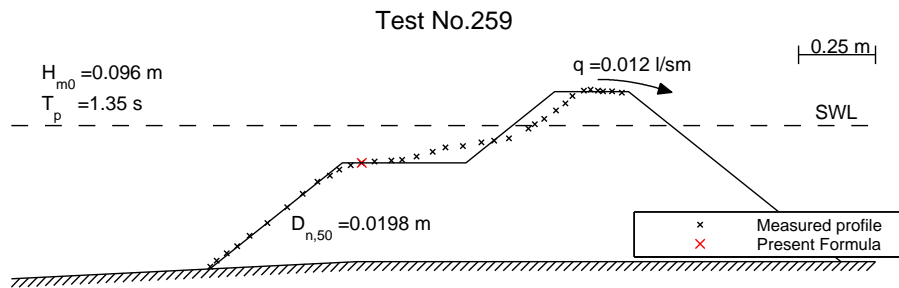
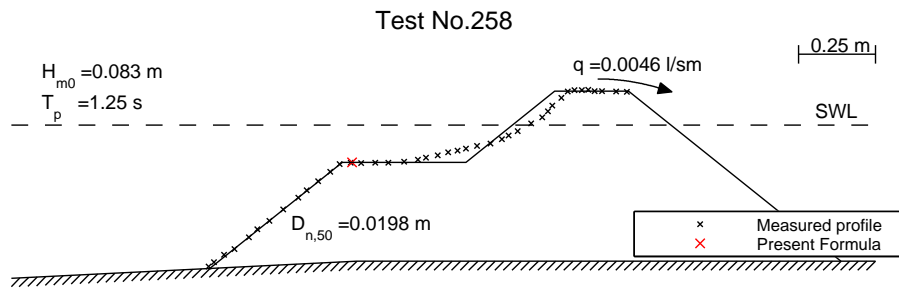
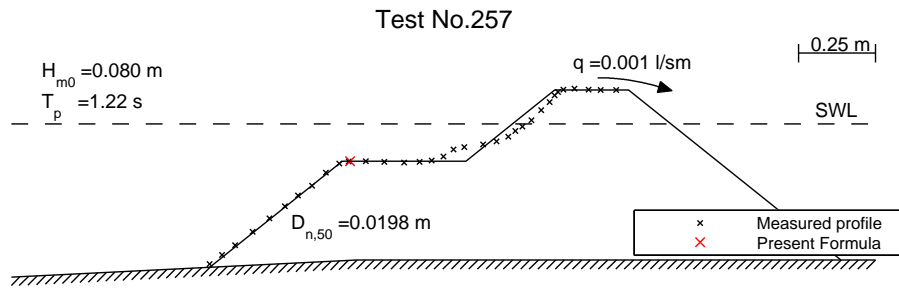


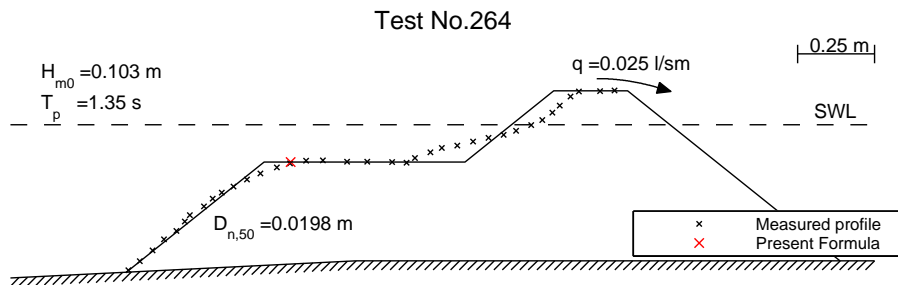
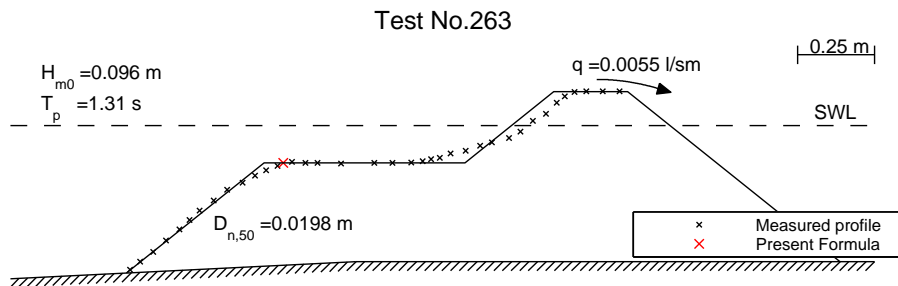
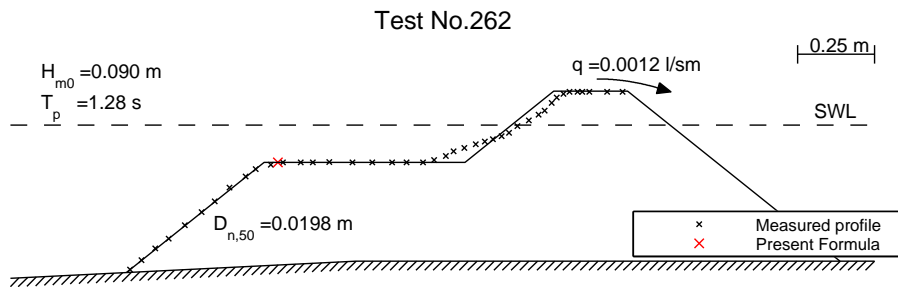
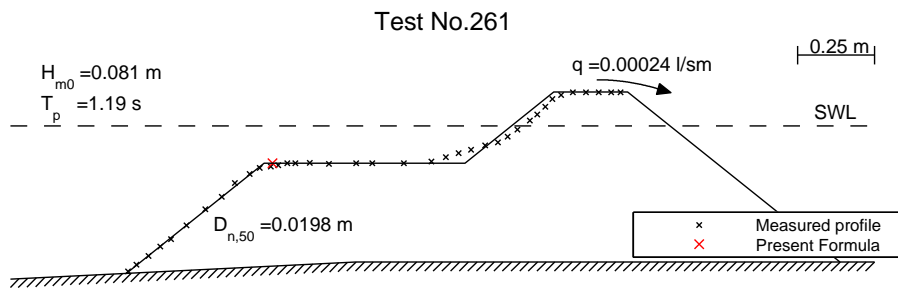
Profile Measurements from Berm Breakwater Tests



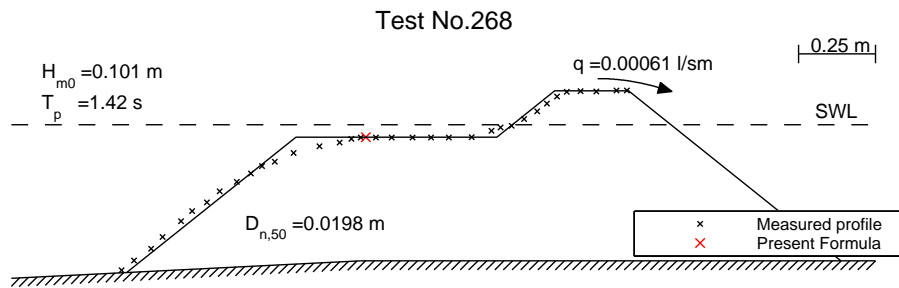
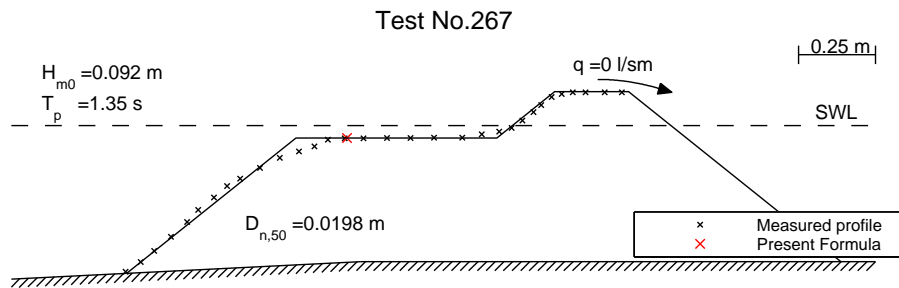
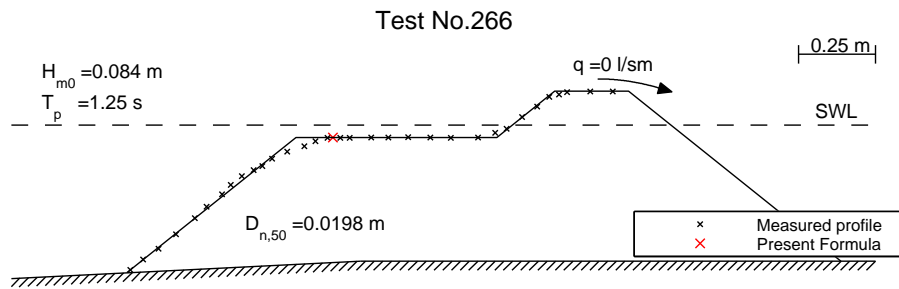
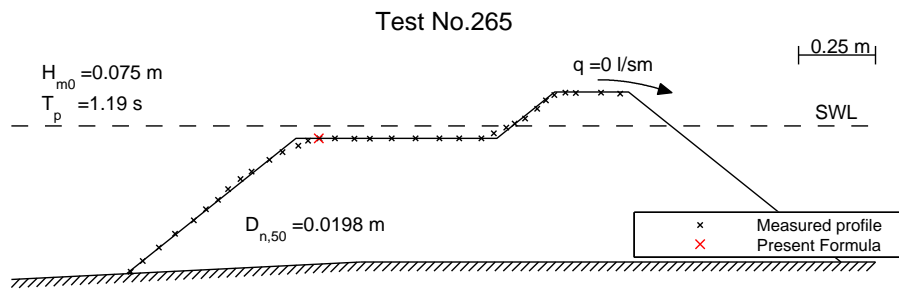


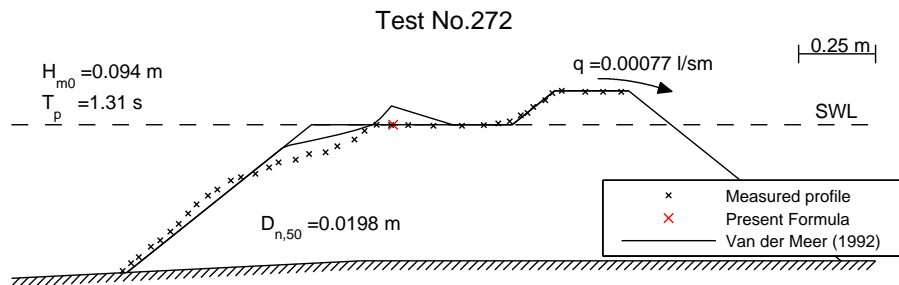
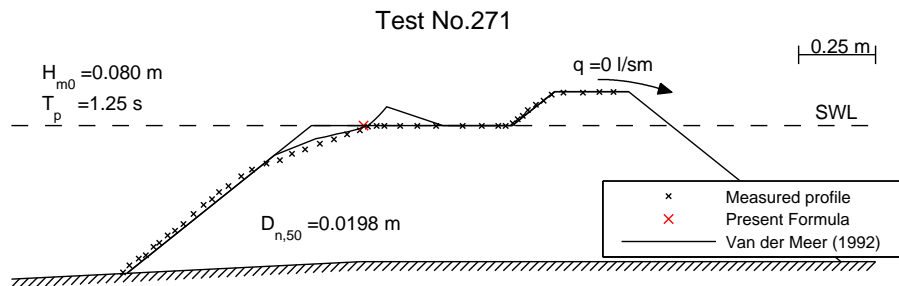
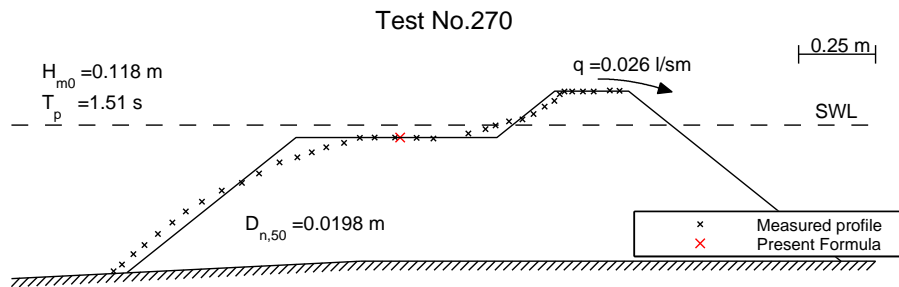
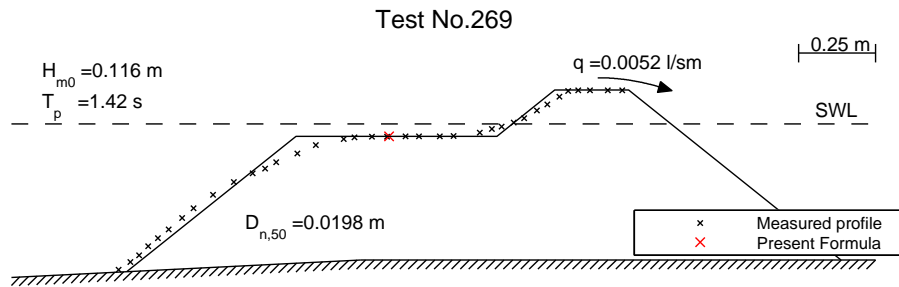
Profile Measurements from Berm Breakwater Tests



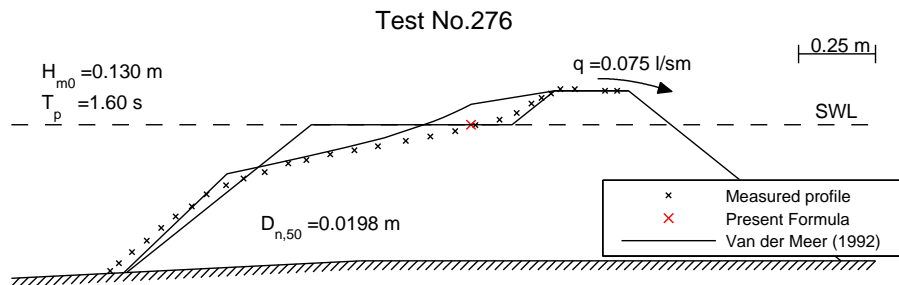
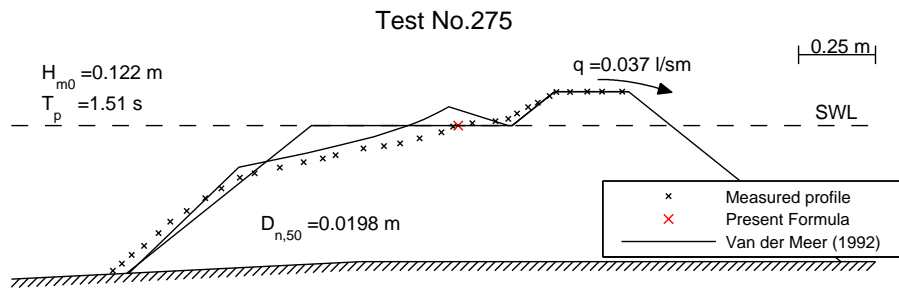
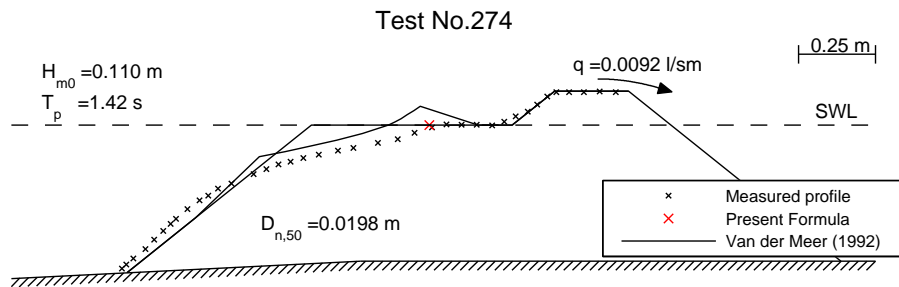
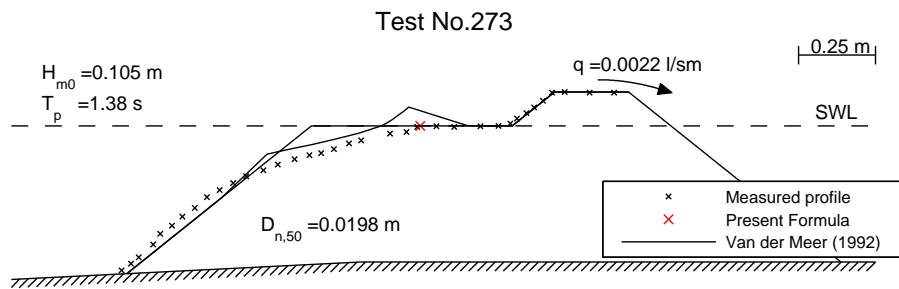


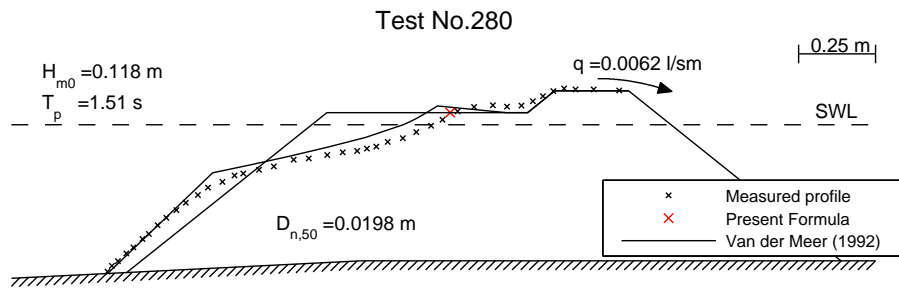
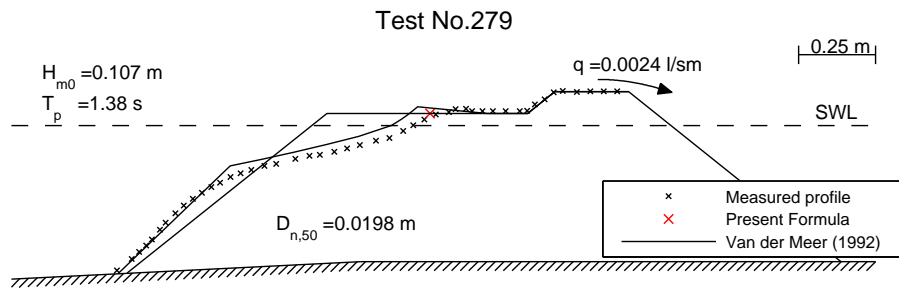
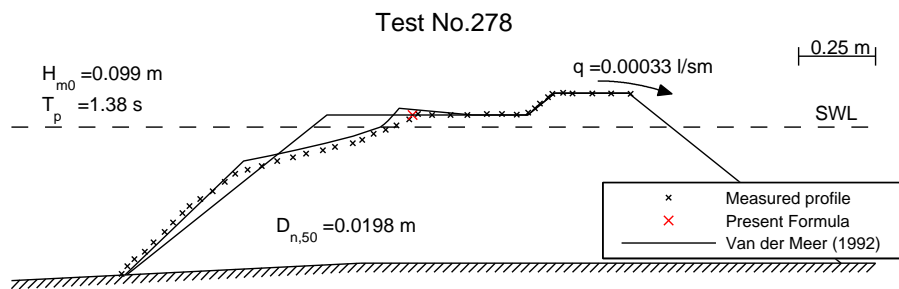
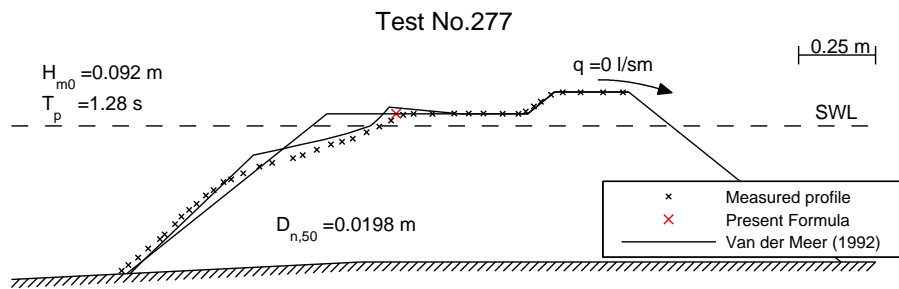
Profile Measurements from Berm Breakwater Tests



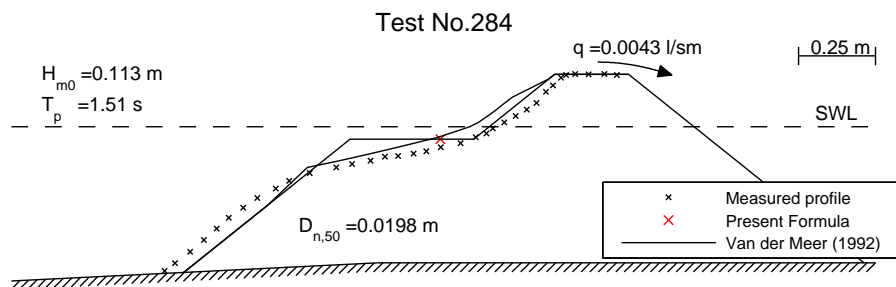
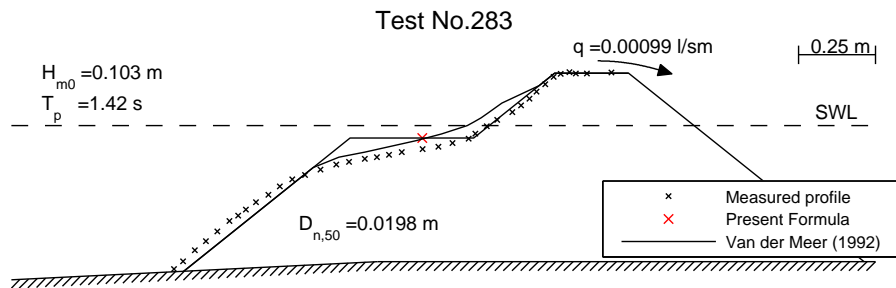
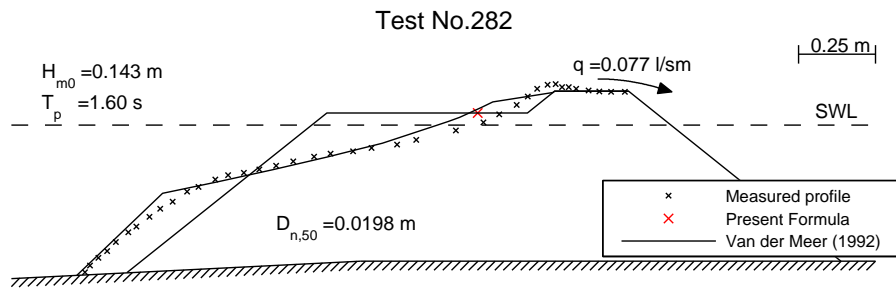
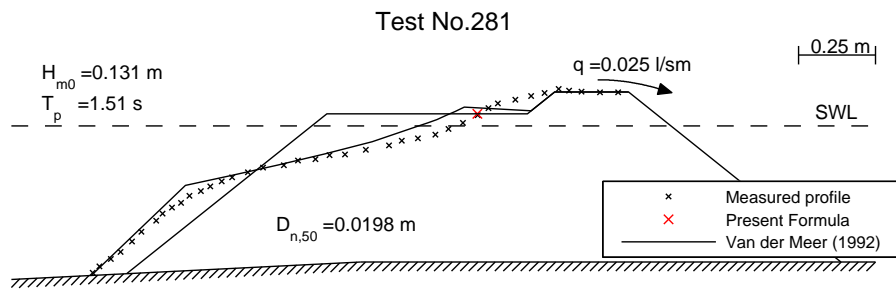


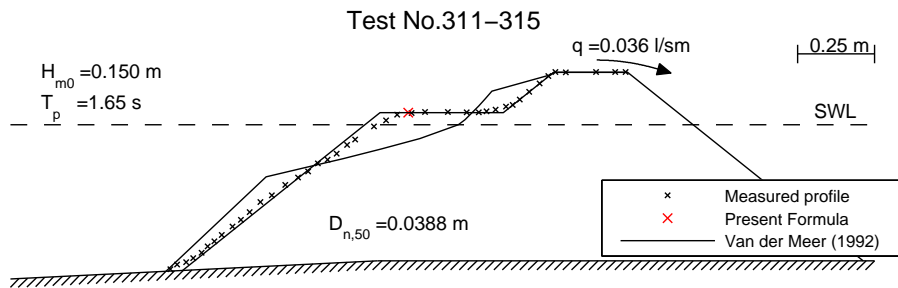
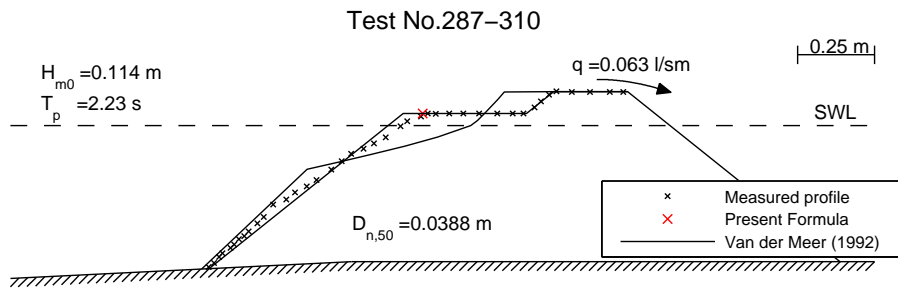
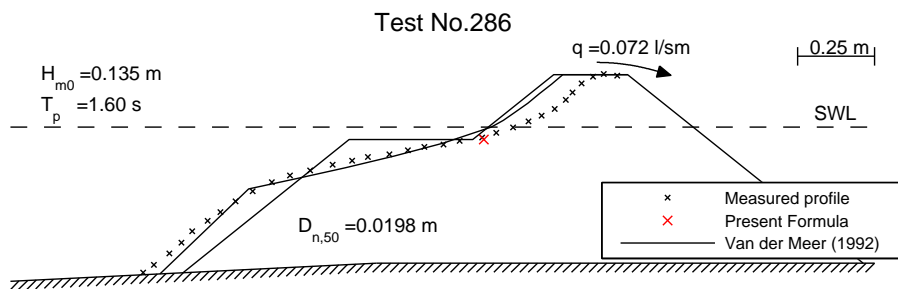
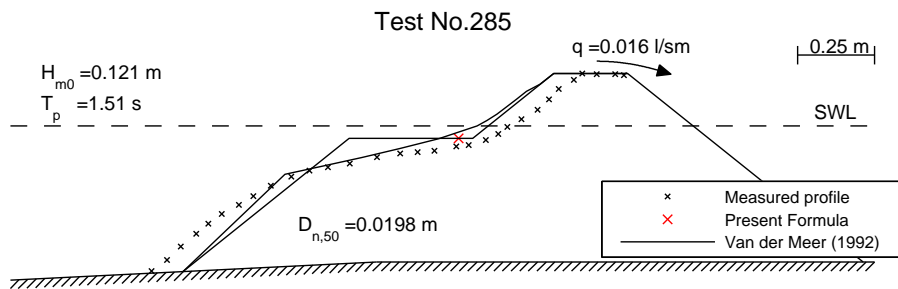
Profile Measurements from Berm Breakwater Tests



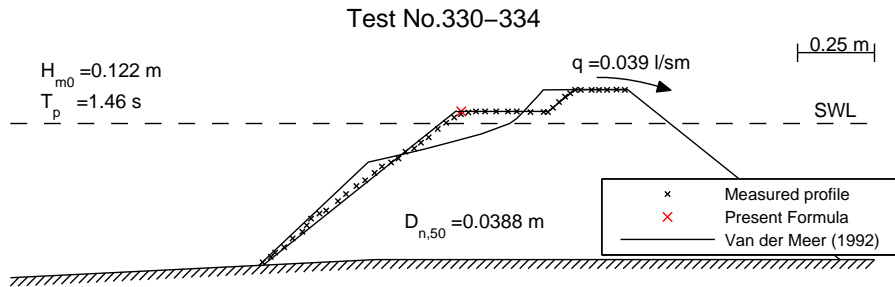
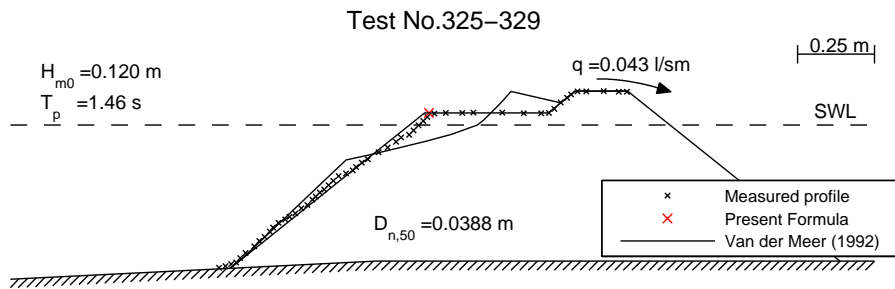
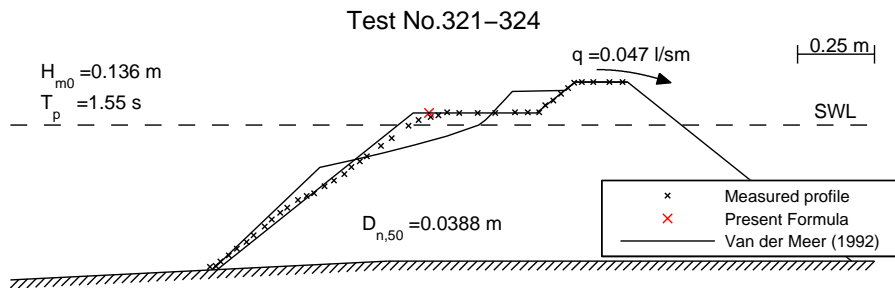
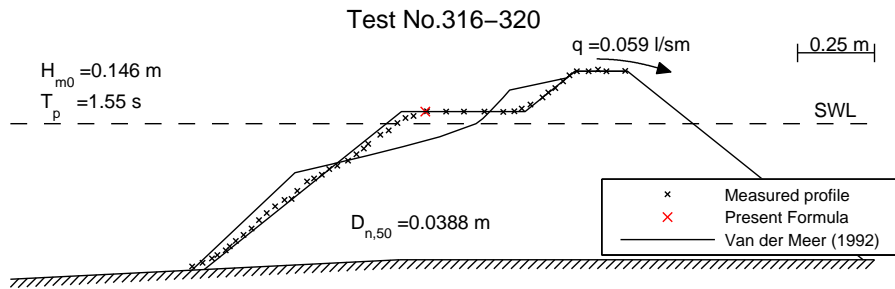


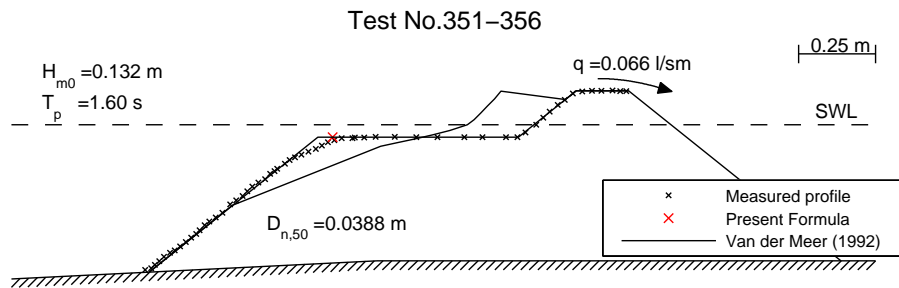
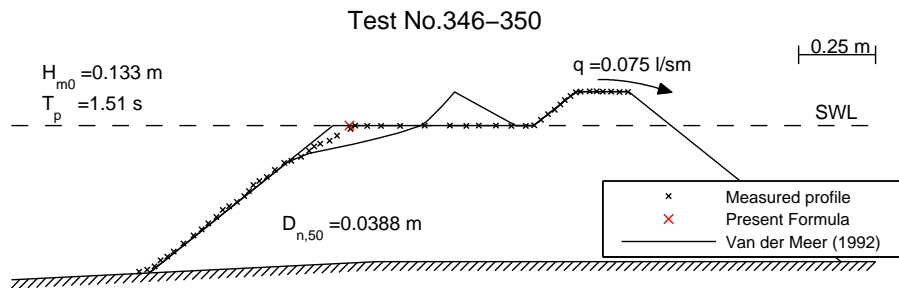
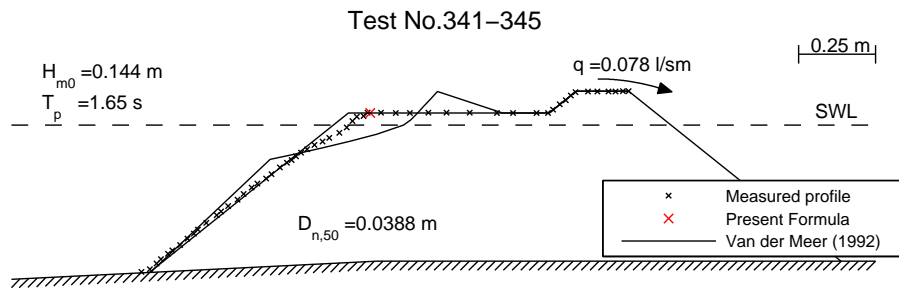
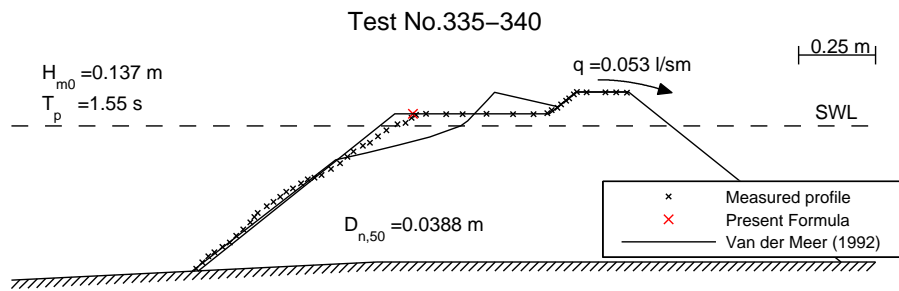
Profile Measurements from Berm Breakwater Tests



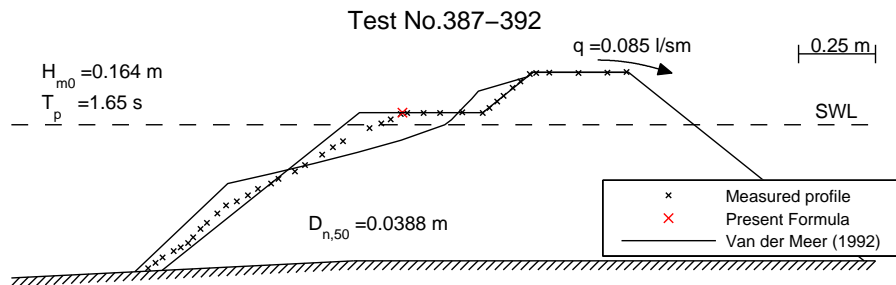
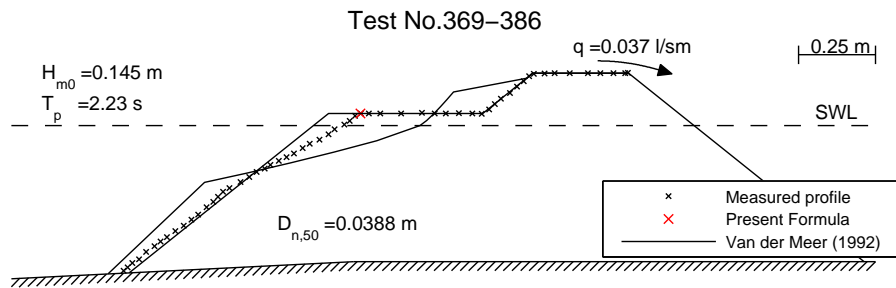
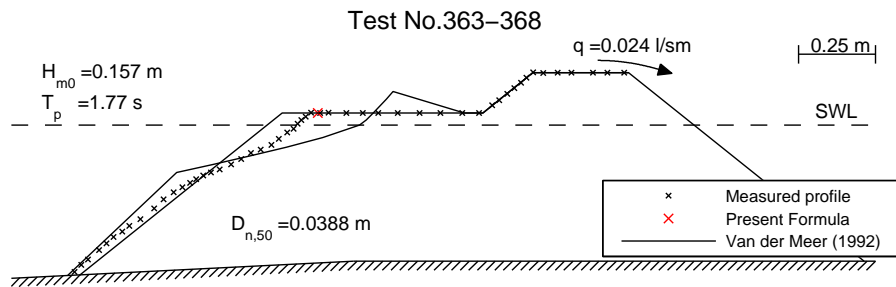
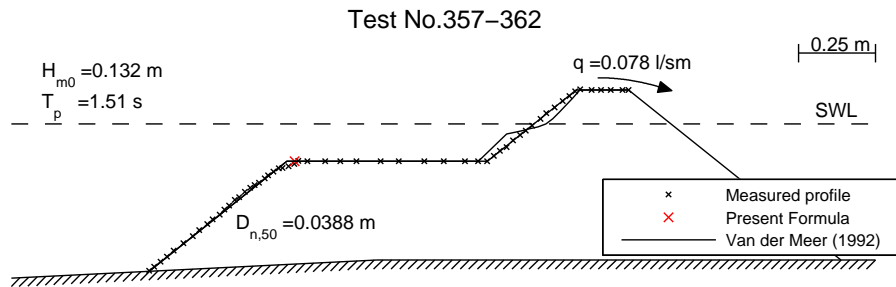


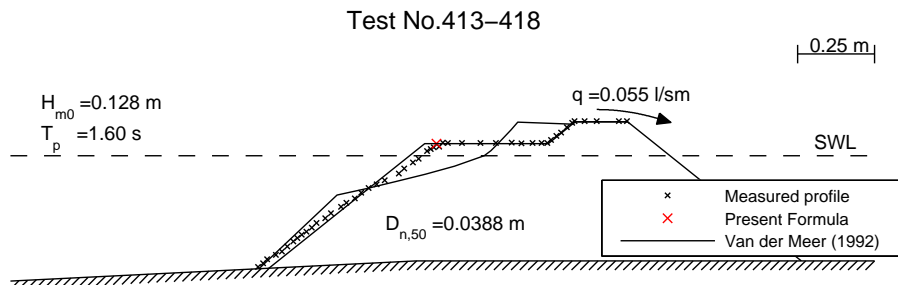
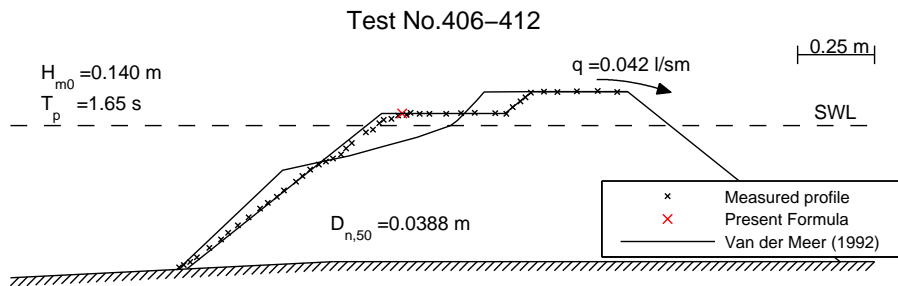
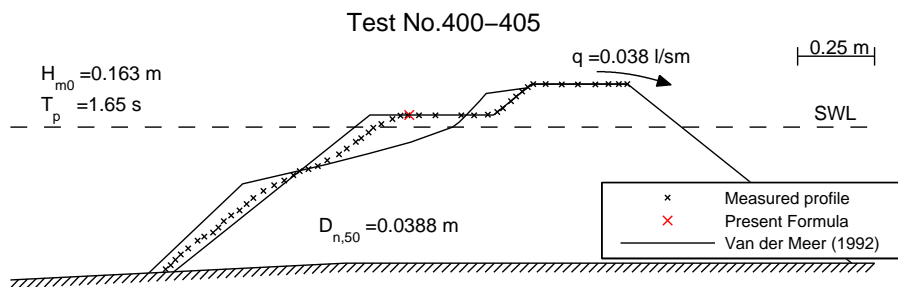
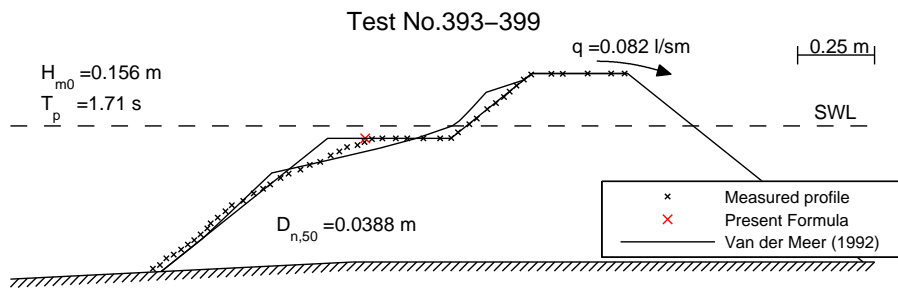
Profile Measurements from Berm Breakwater Tests



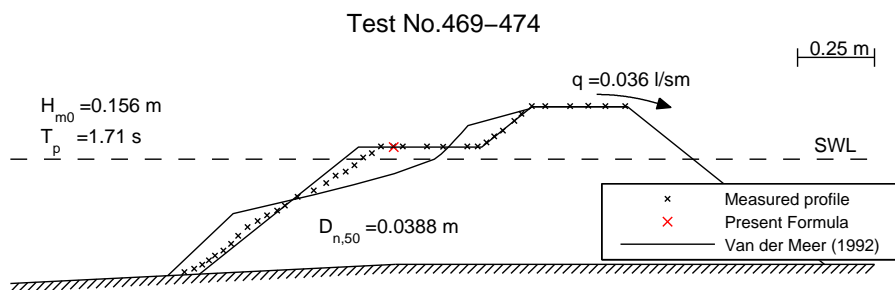
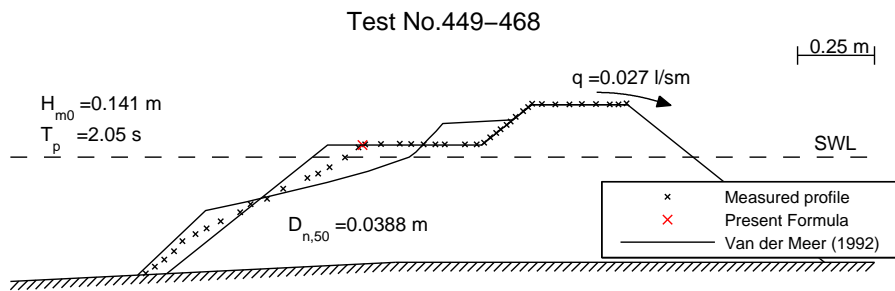
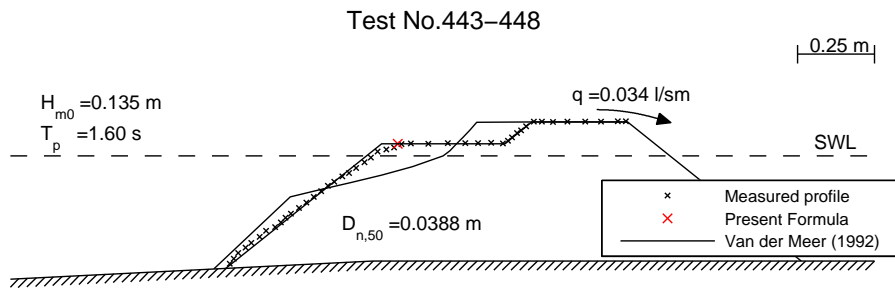
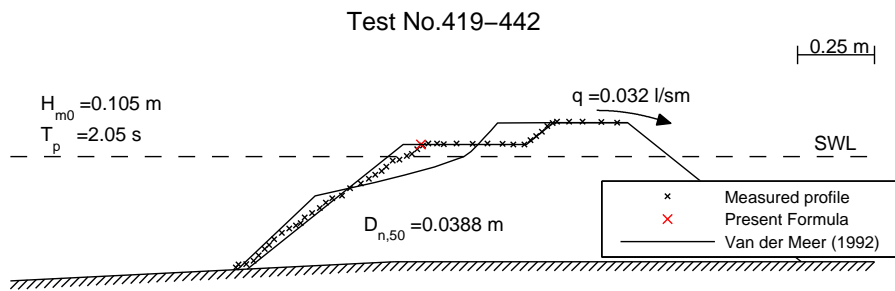


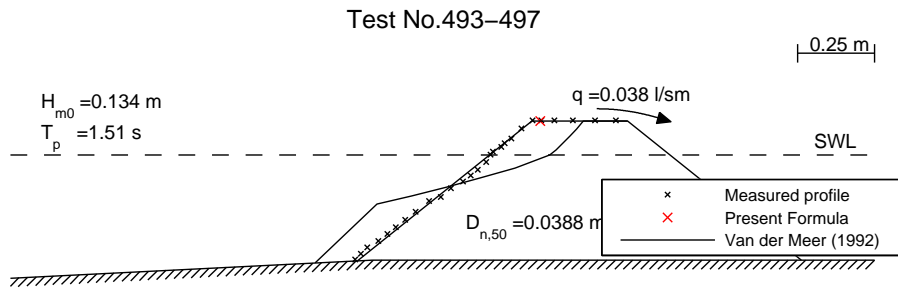
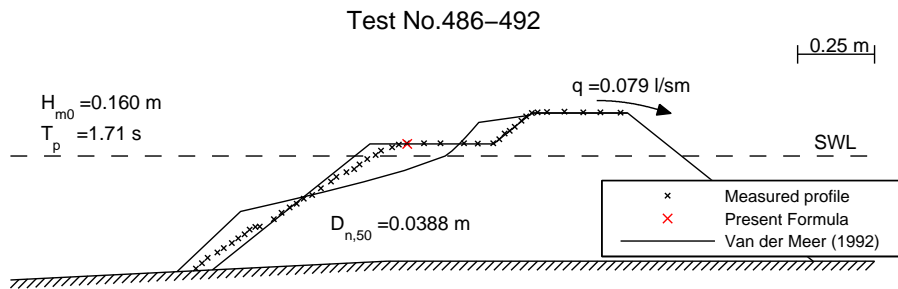
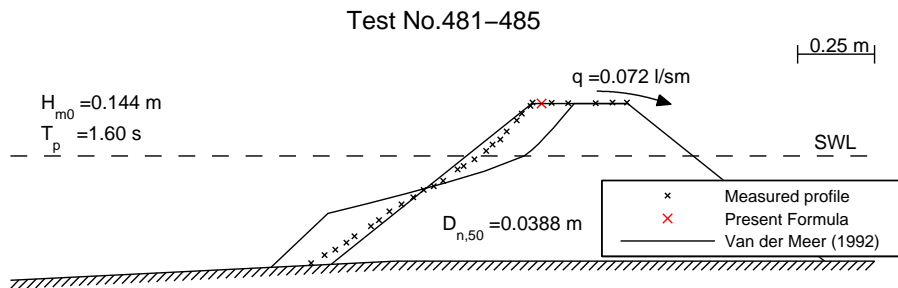
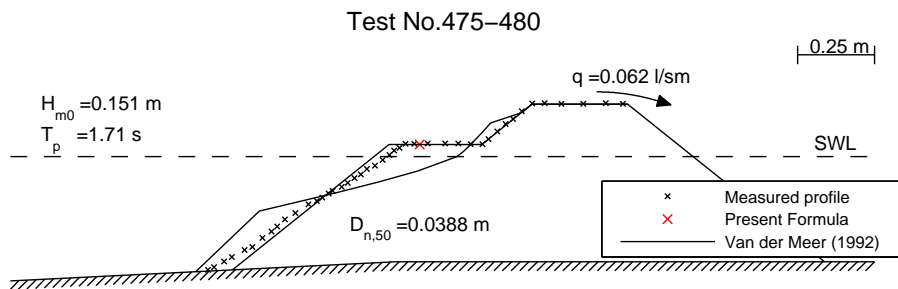
Profile Measurements from Berm Breakwater Tests



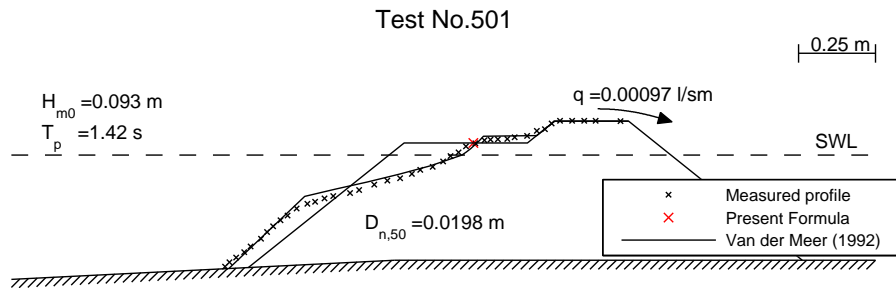
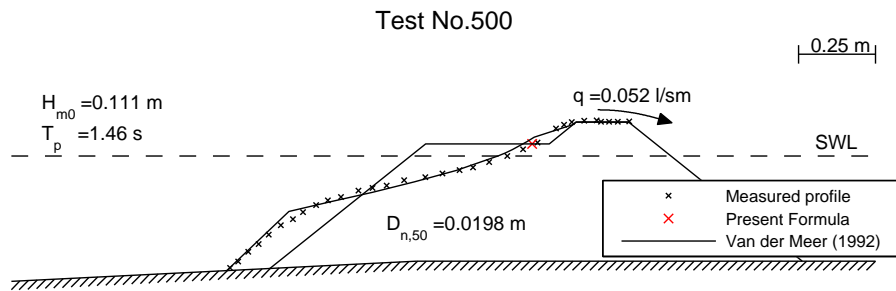
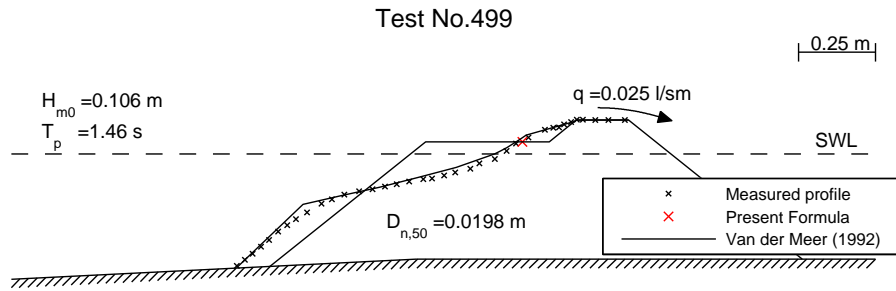
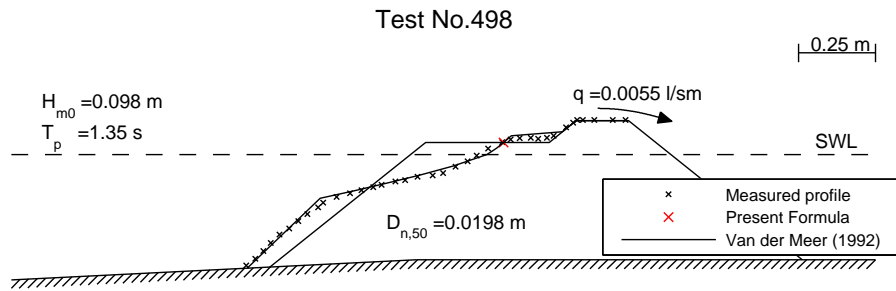


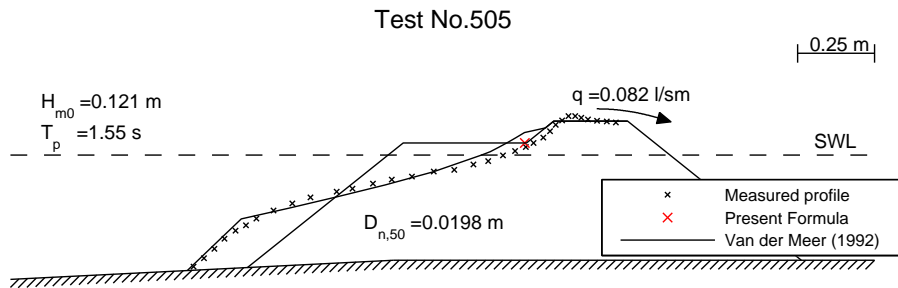
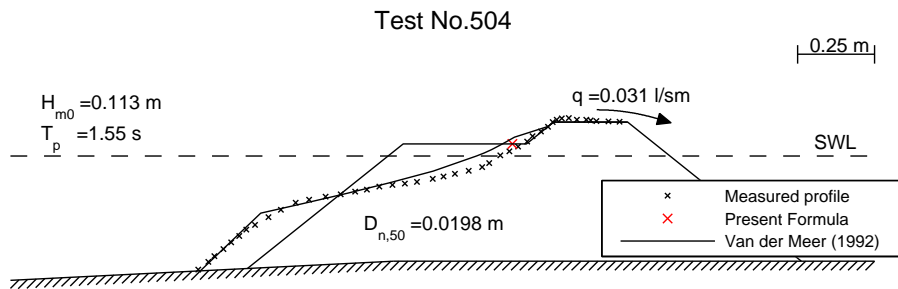
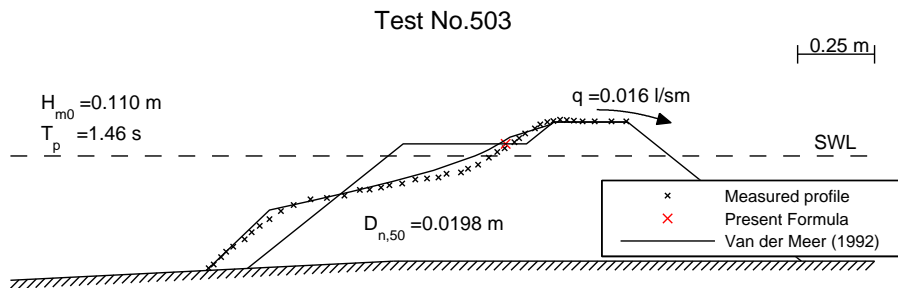
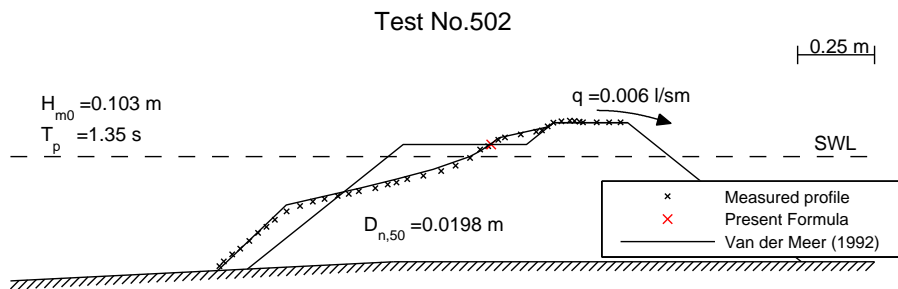
Profile Measurements from Berm Breakwater Tests



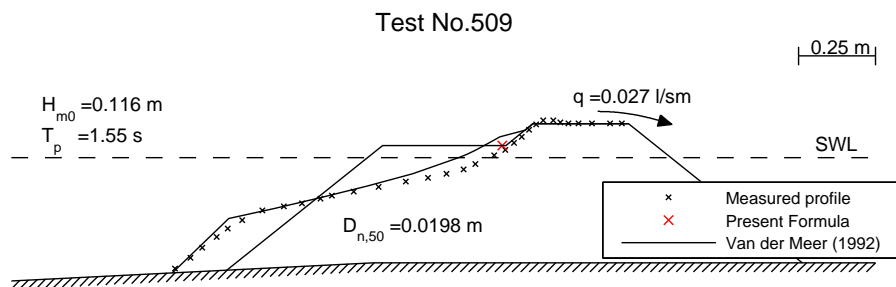
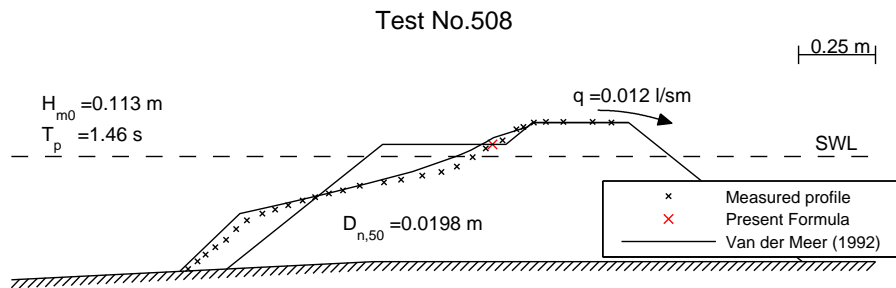
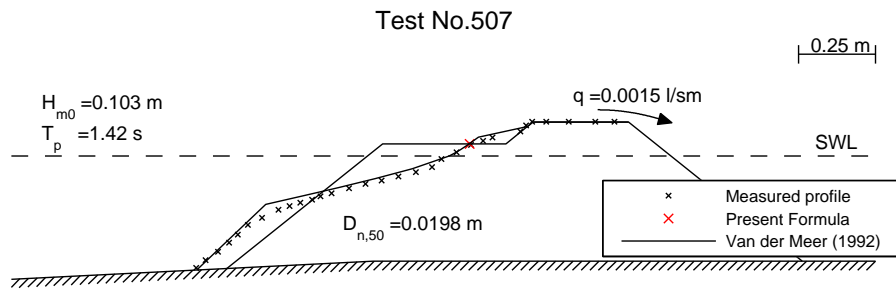
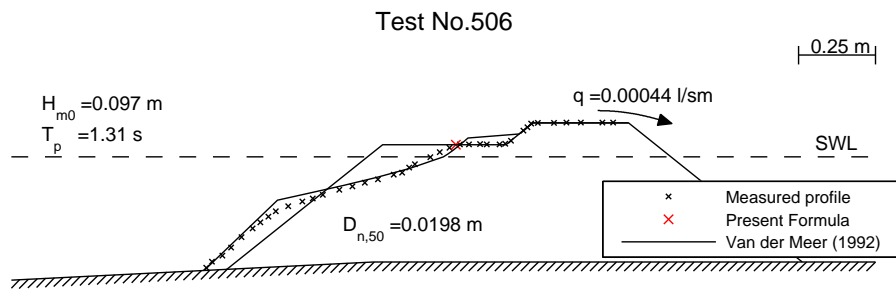


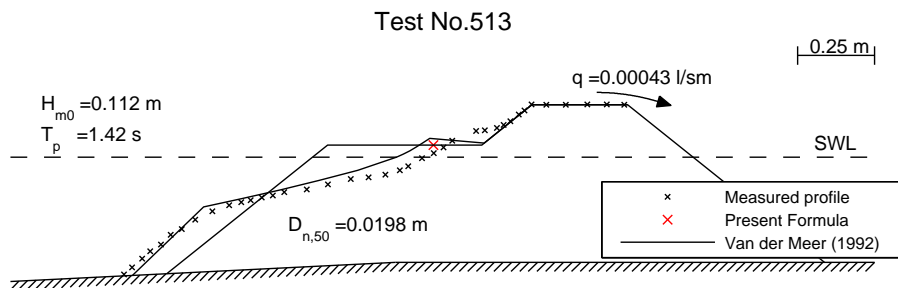
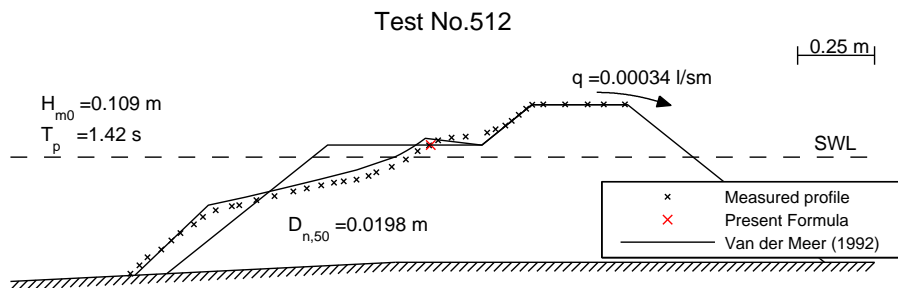
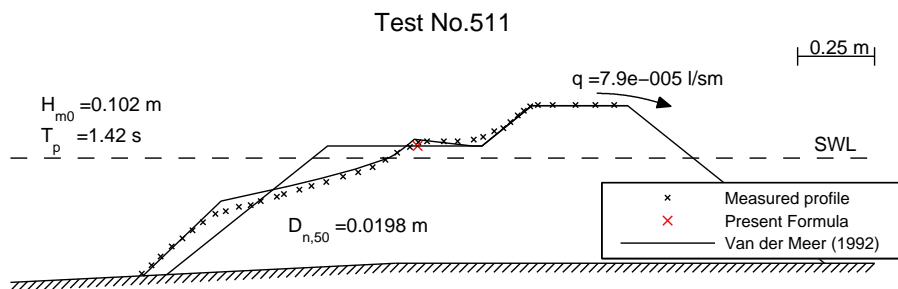
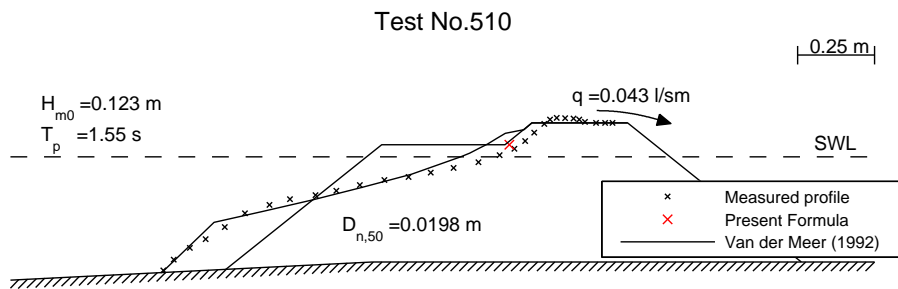
Profile Measurements from Berm Breakwater Tests



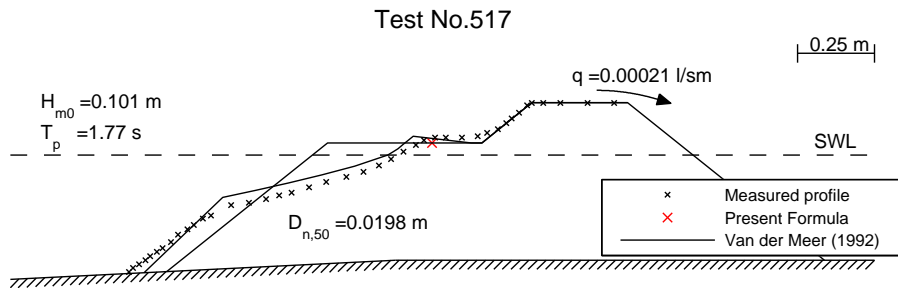
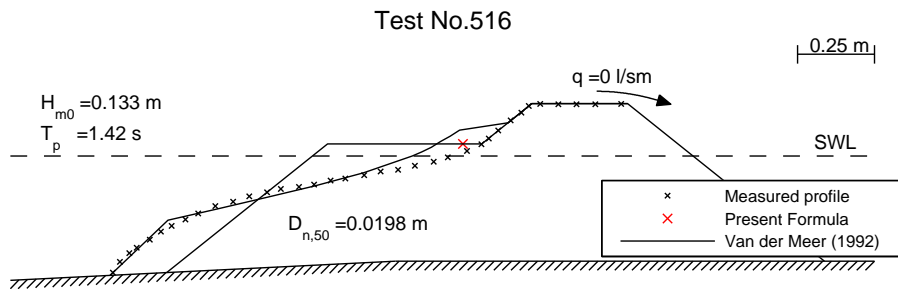
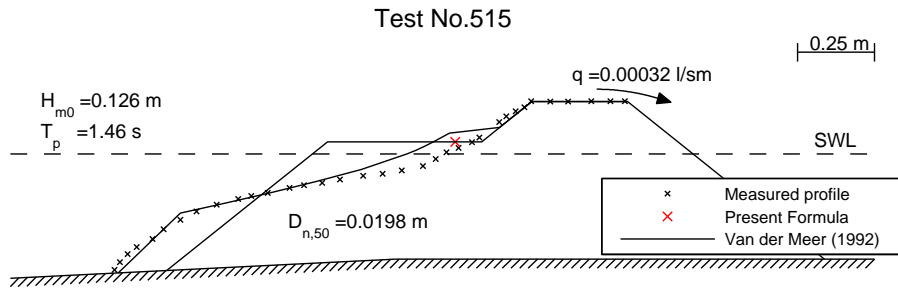
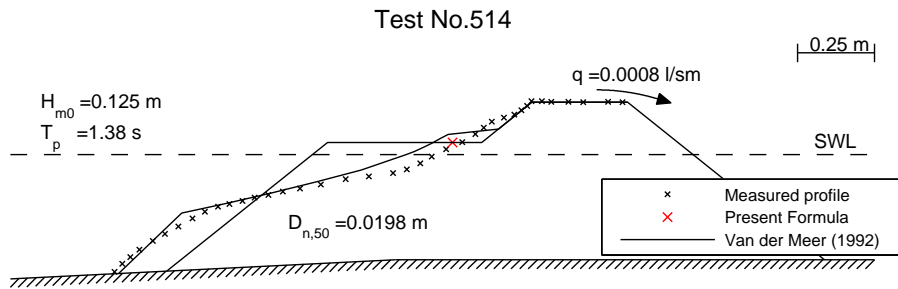


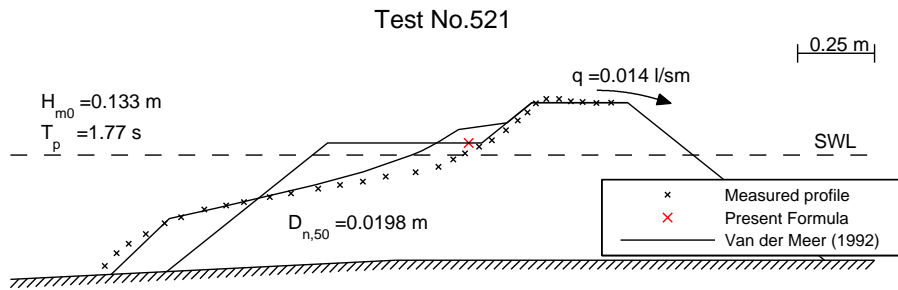
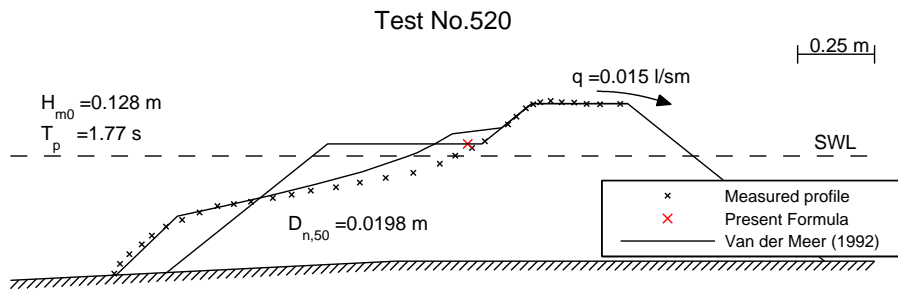
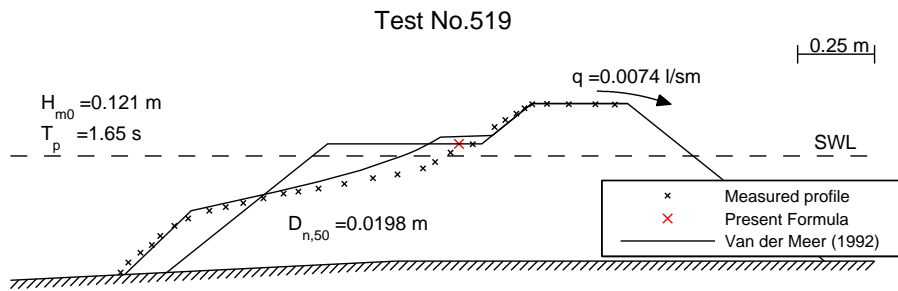
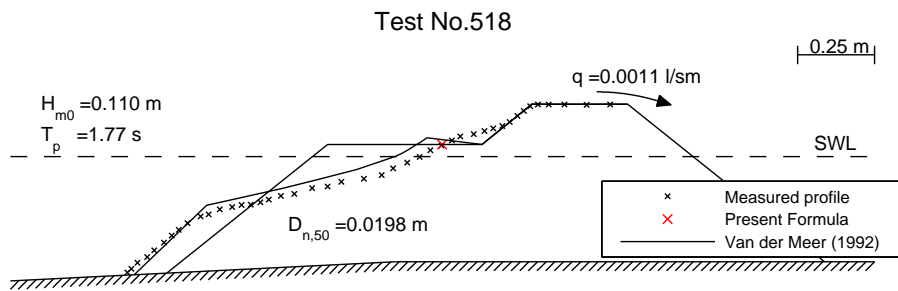
Profile Measurements from Berm Breakwater Tests



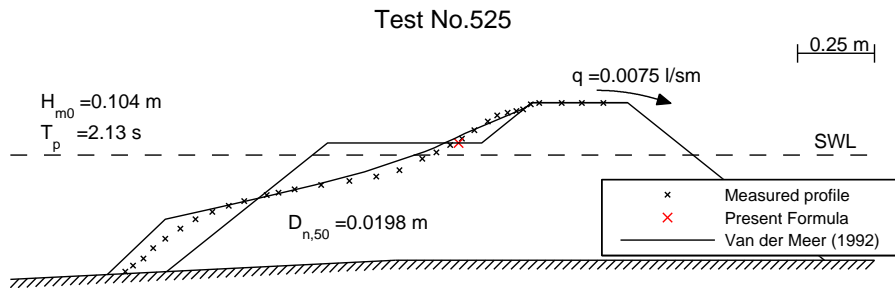
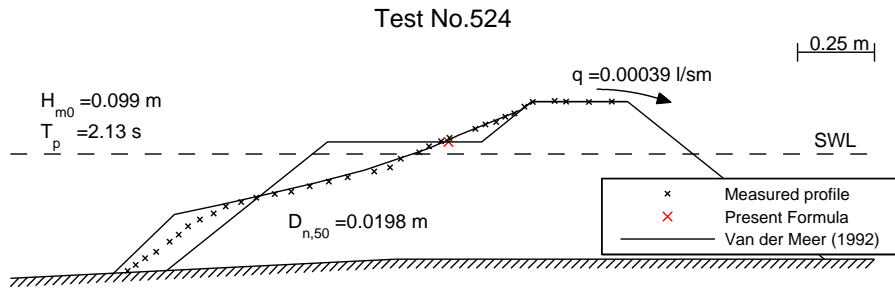
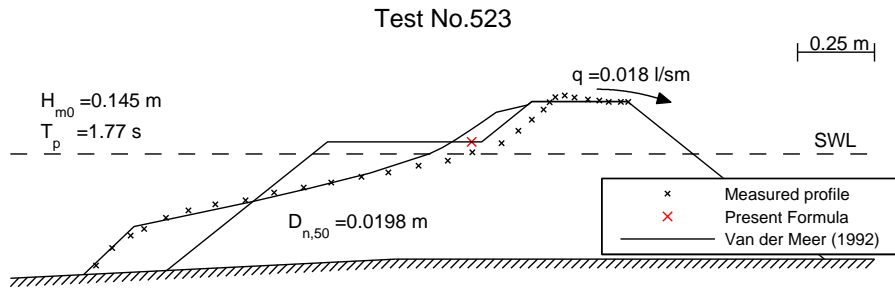
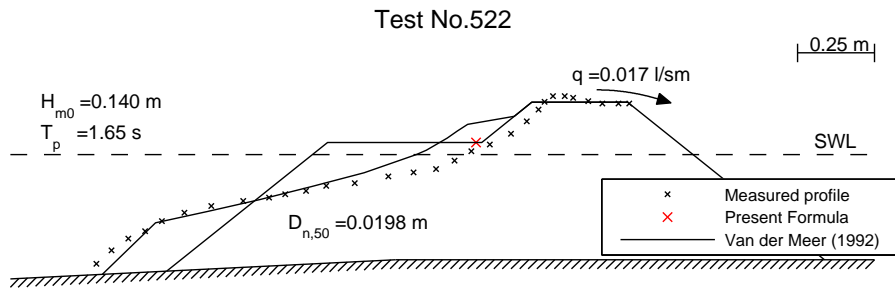


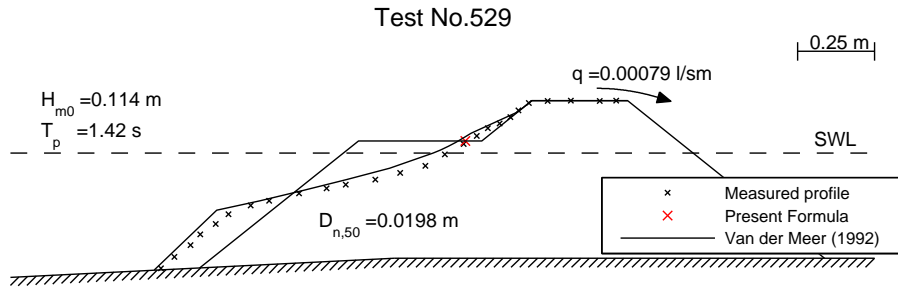
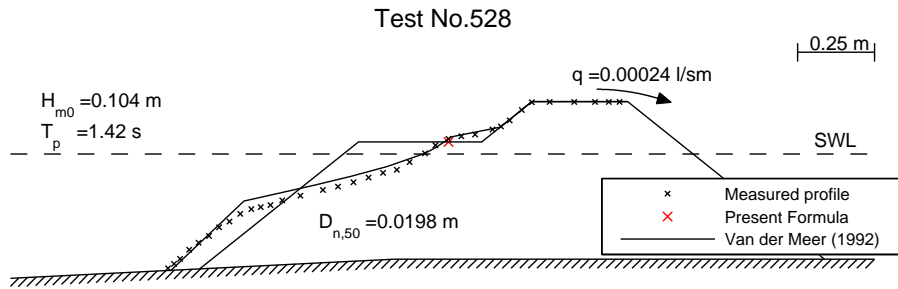
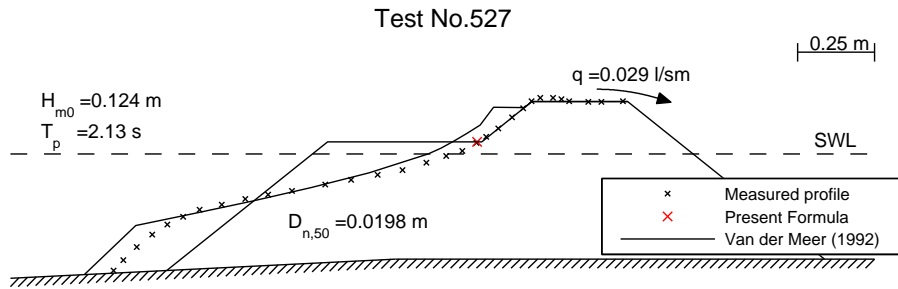
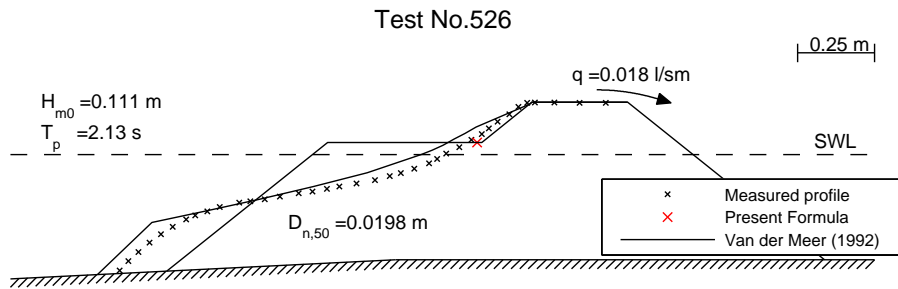
Profile Measurements from Berm Breakwater Tests



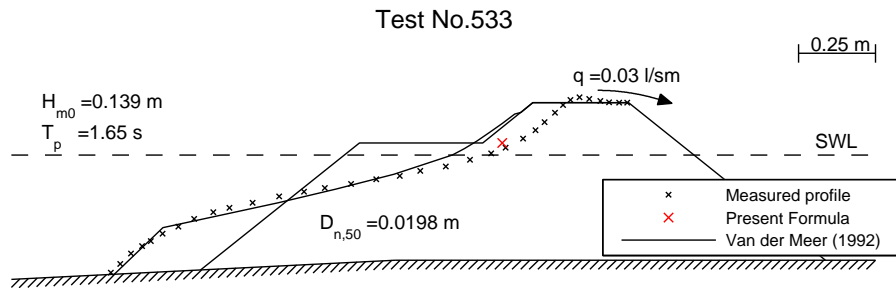
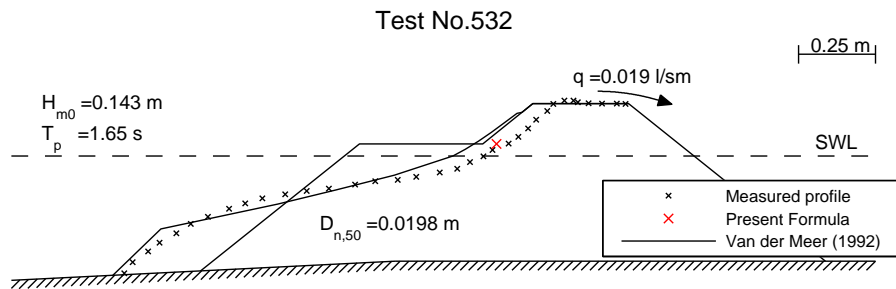
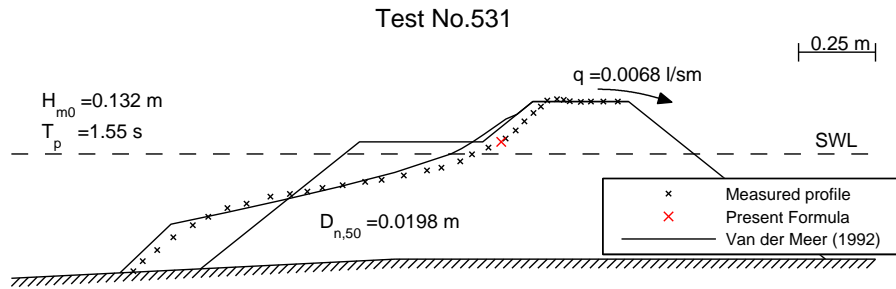
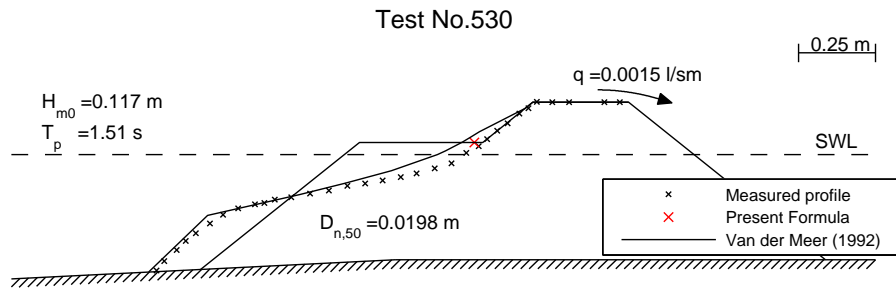


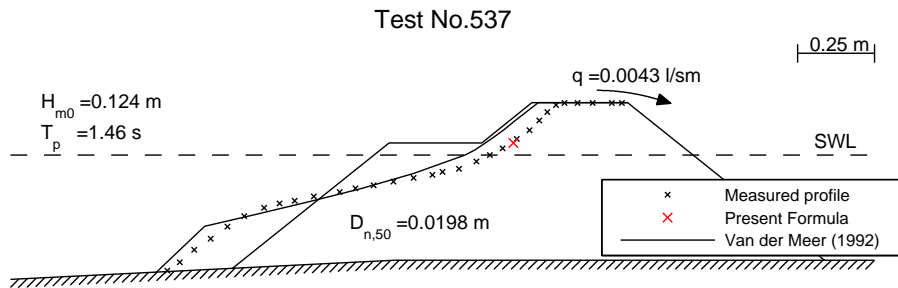
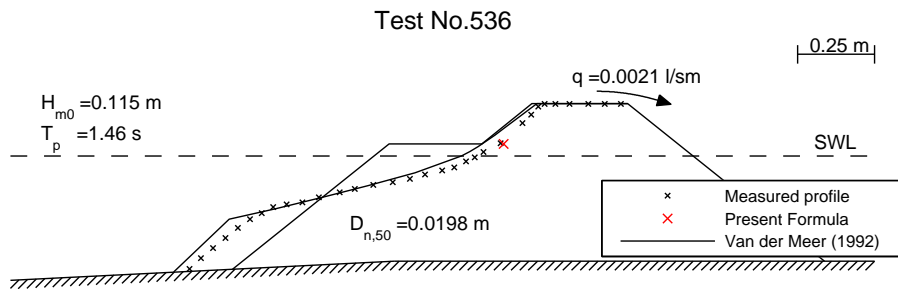
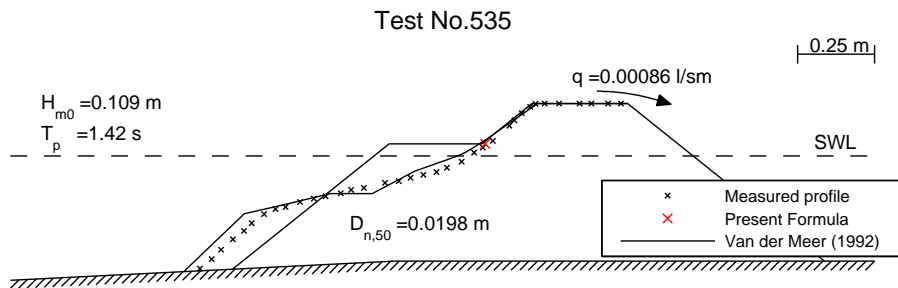
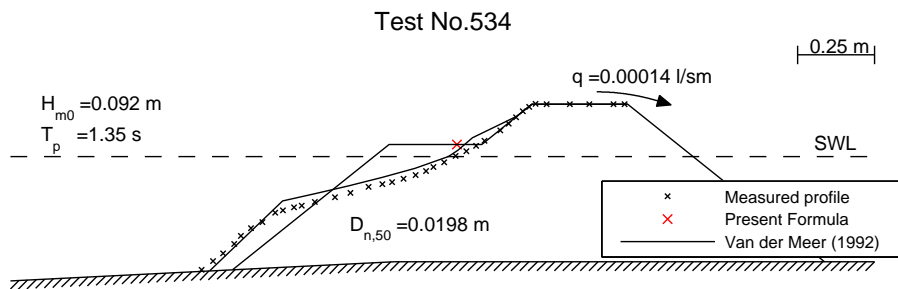
Profile Measurements from Berm Breakwater Tests



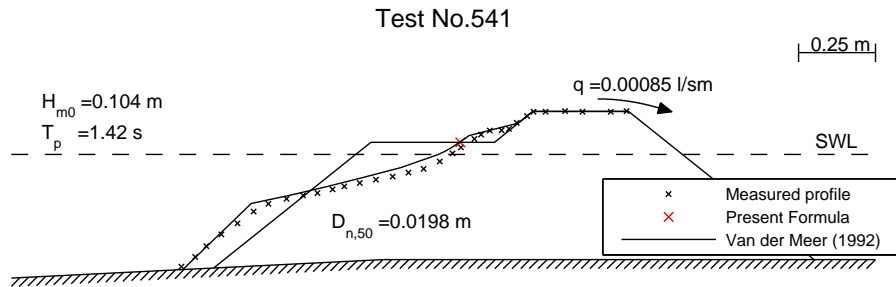
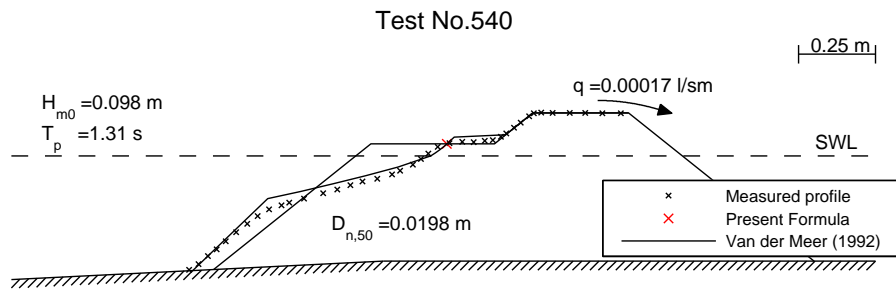
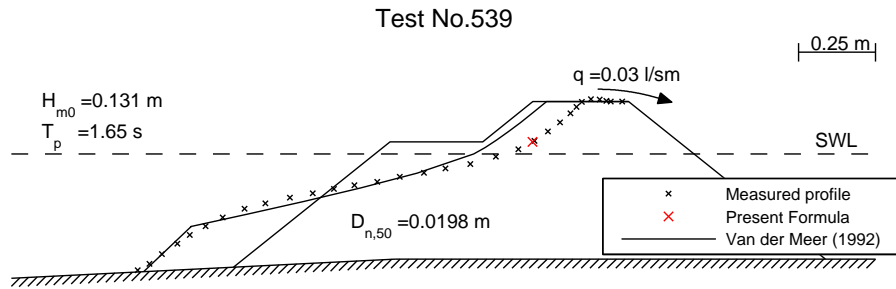
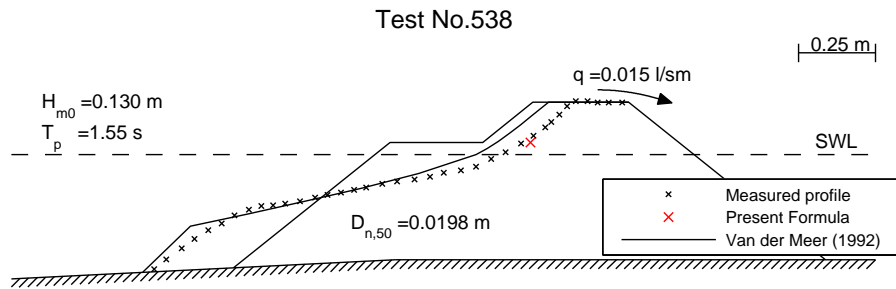


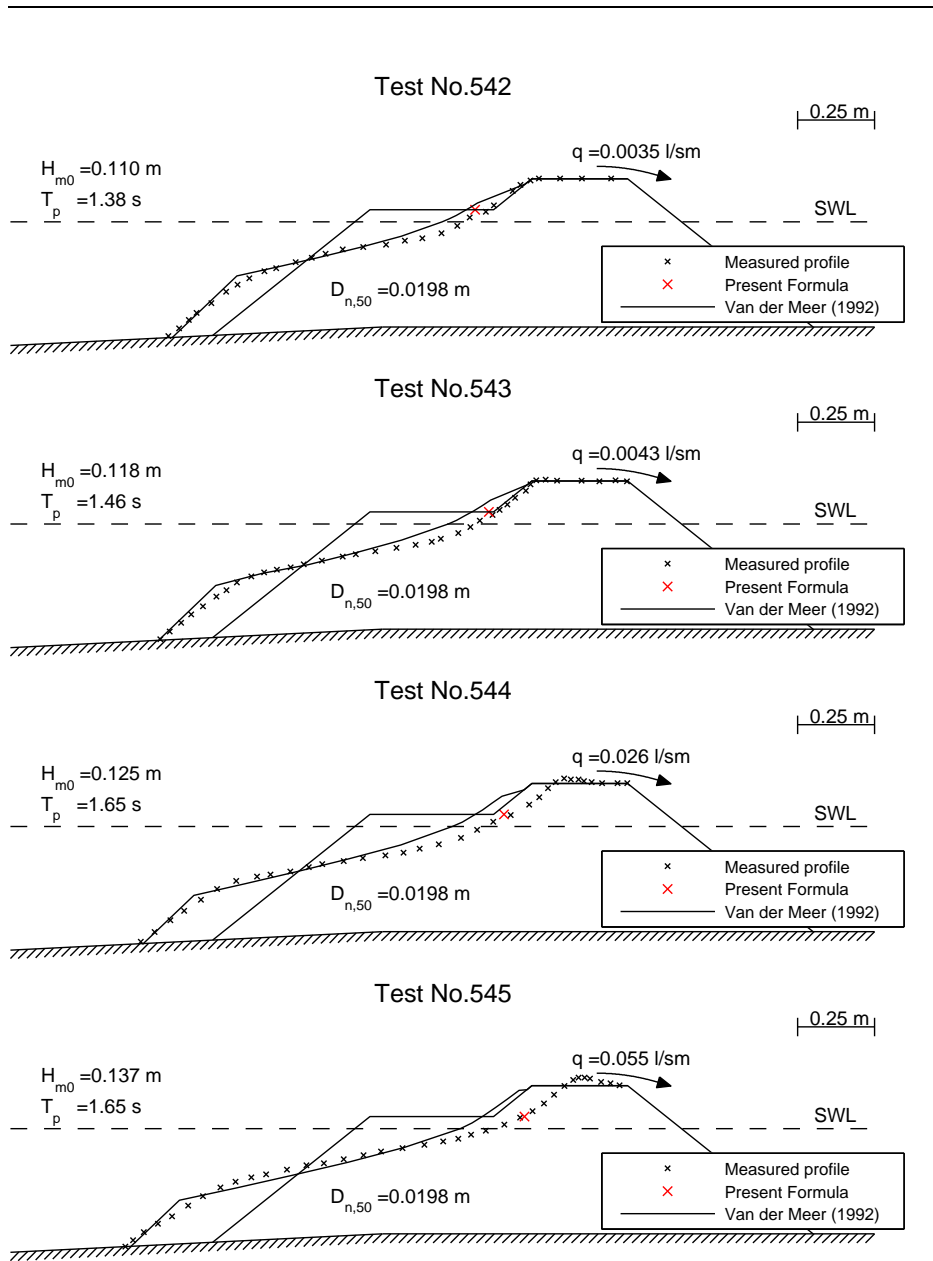
Profile Measurements from Berm Breakwater Tests



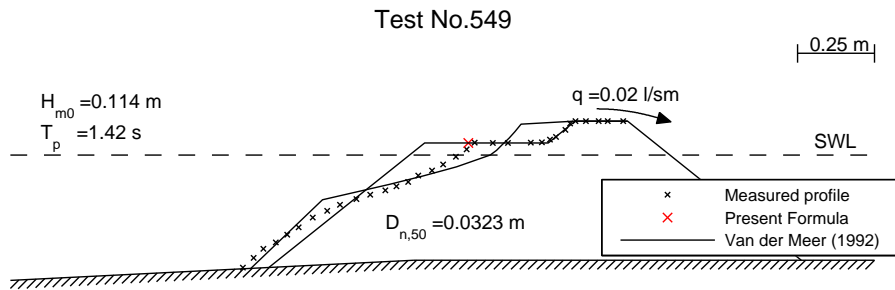
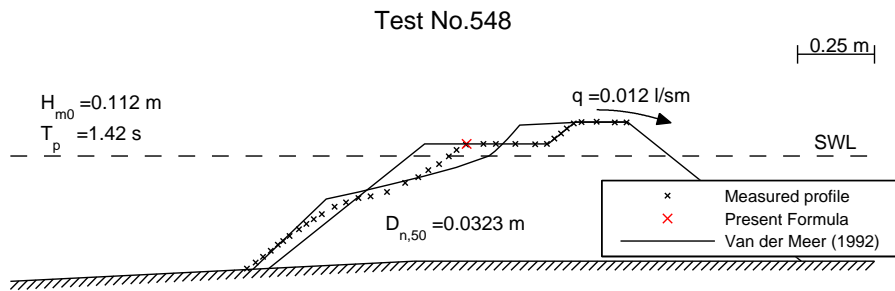
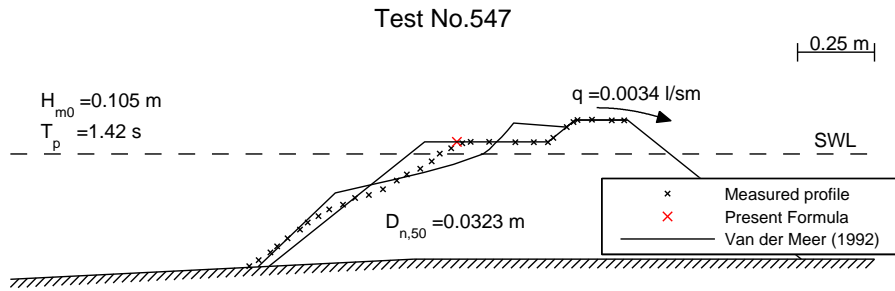
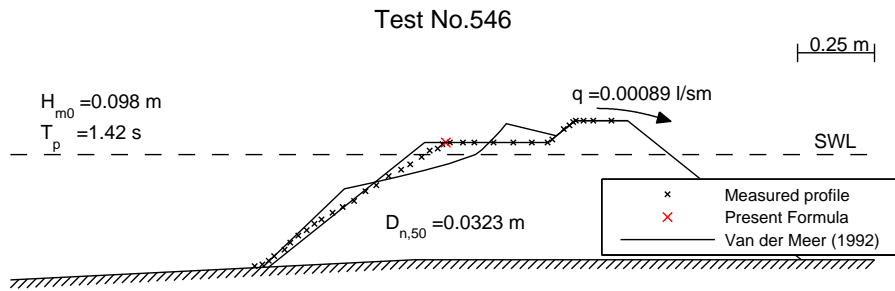


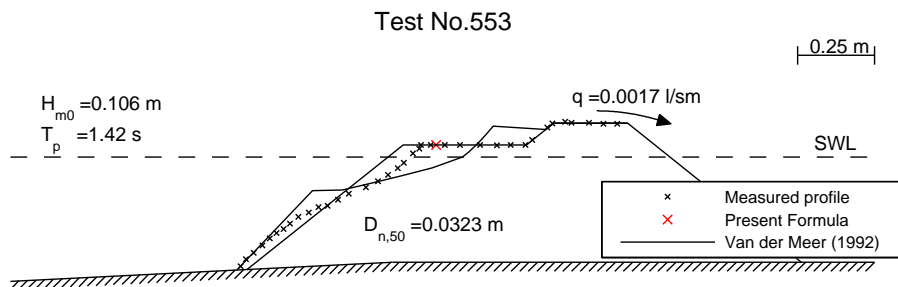
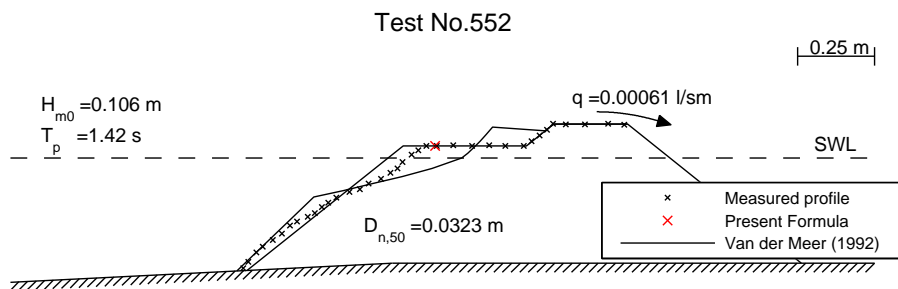
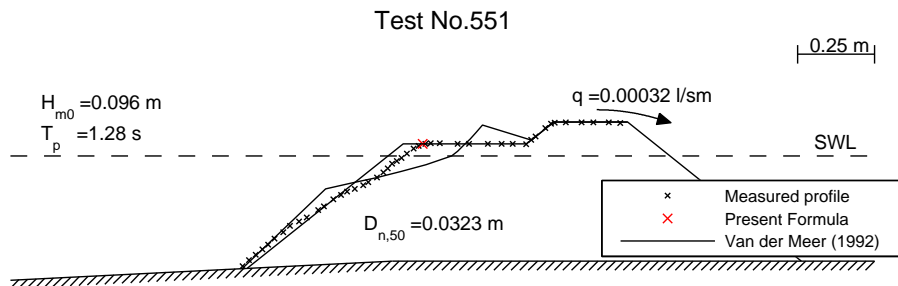
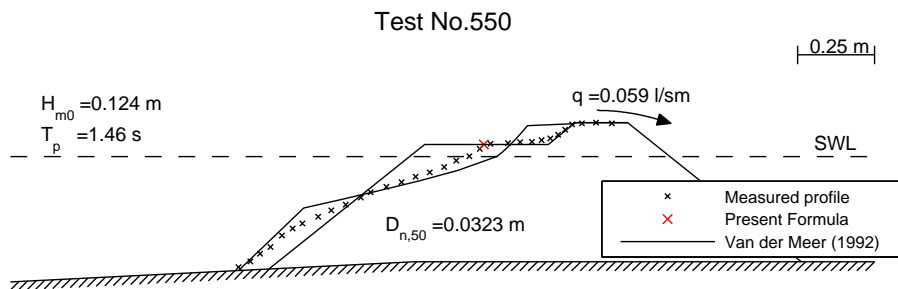
Profile Measurements from Berm Breakwater Tests



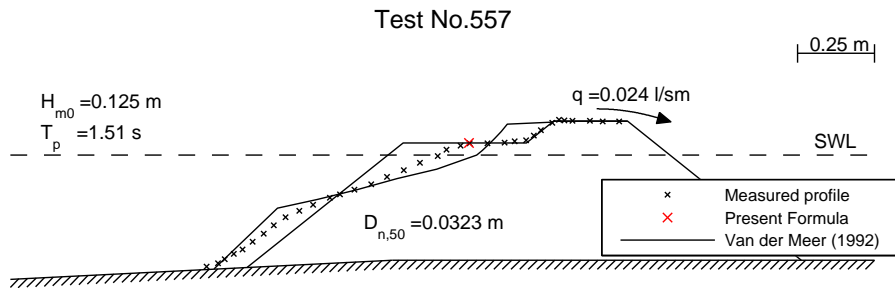
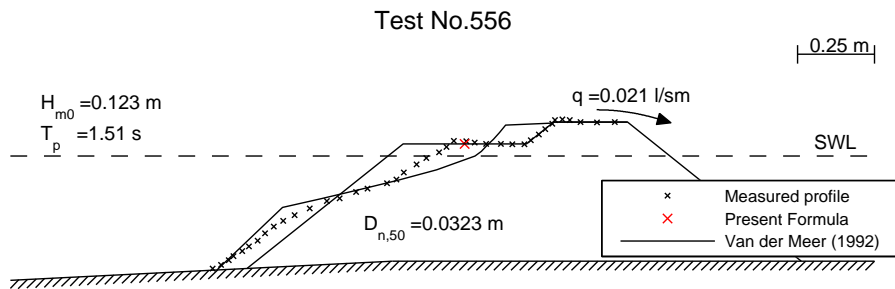
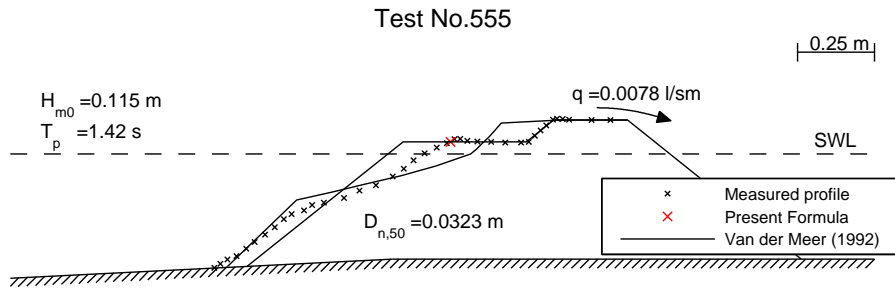
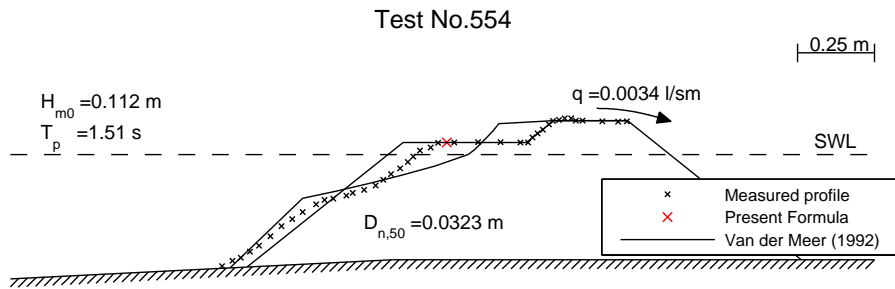


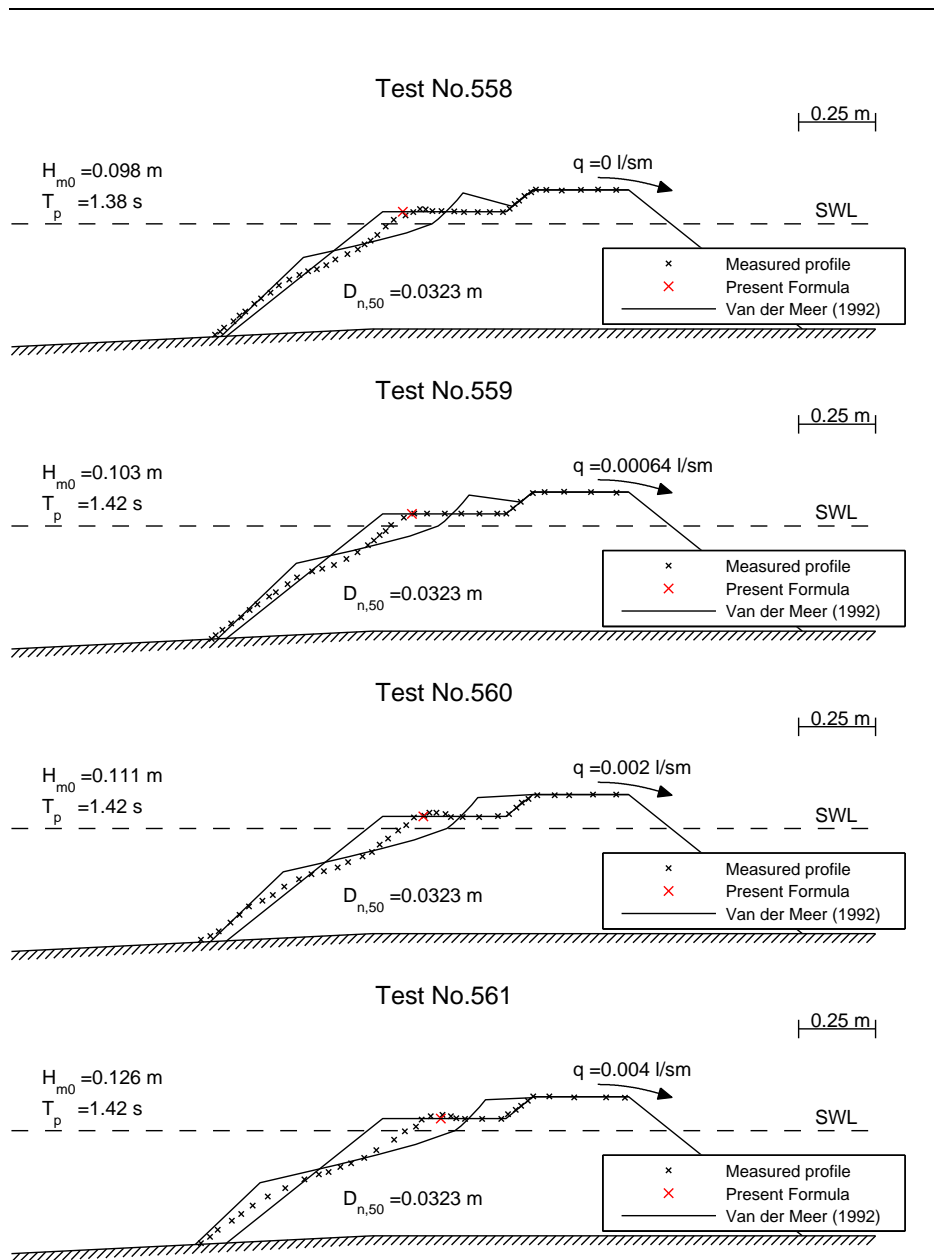
Profile Measurements from Berm Breakwater Tests



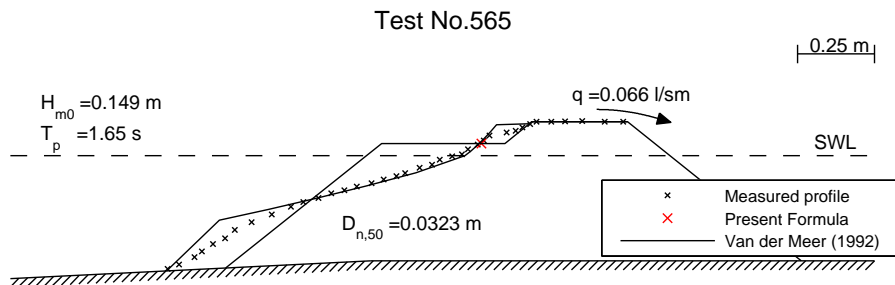
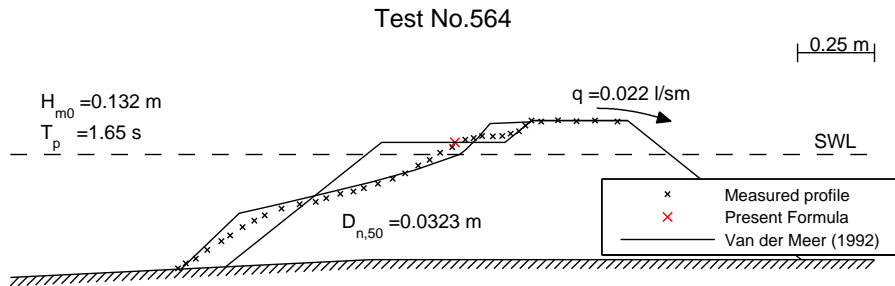
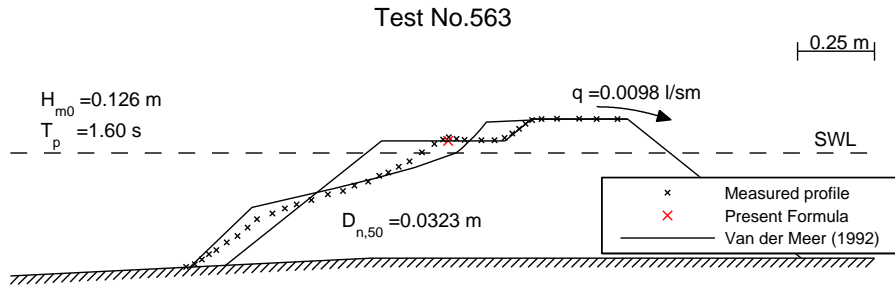
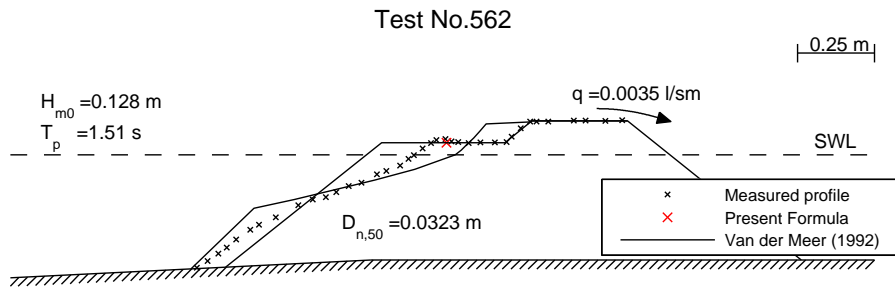


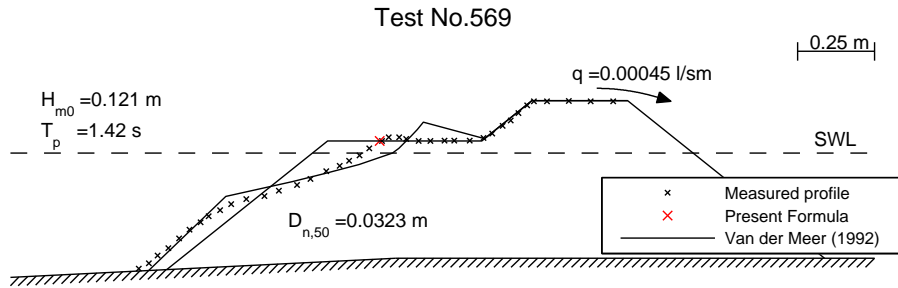
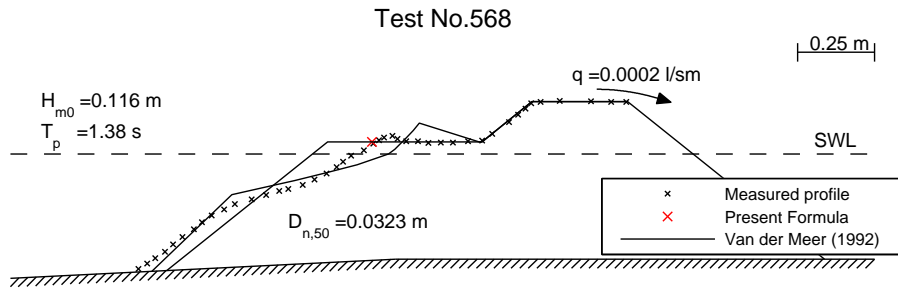
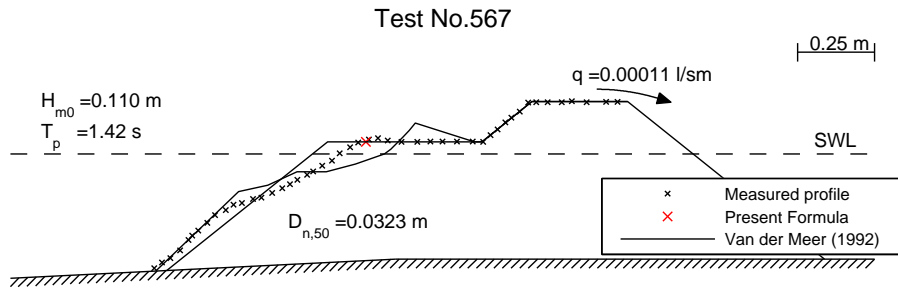
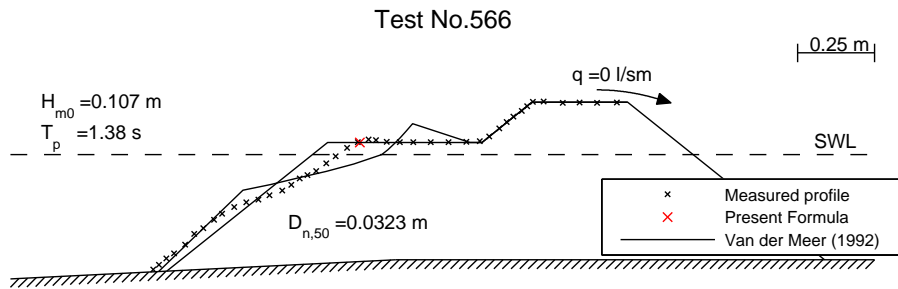
Profile Measurements from Berm Breakwater Tests



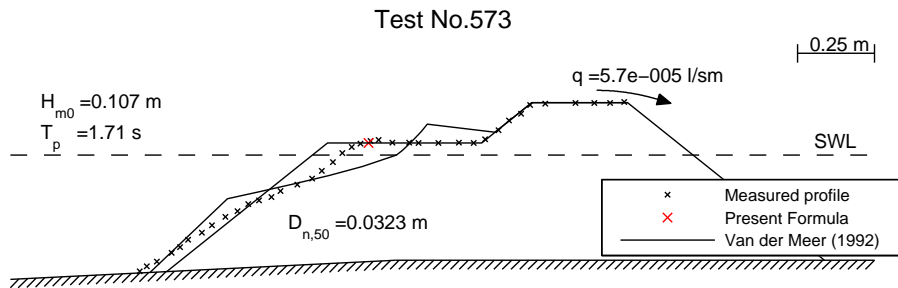
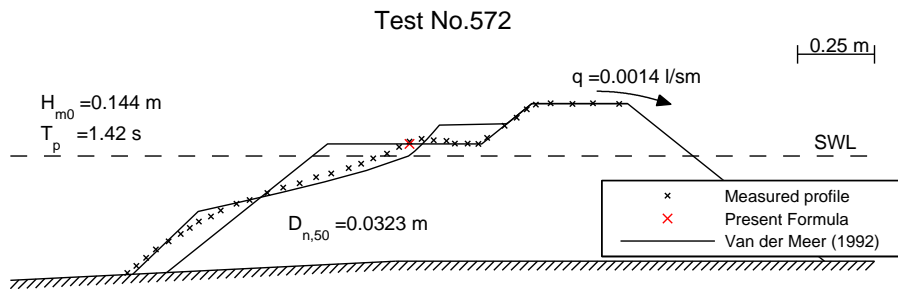
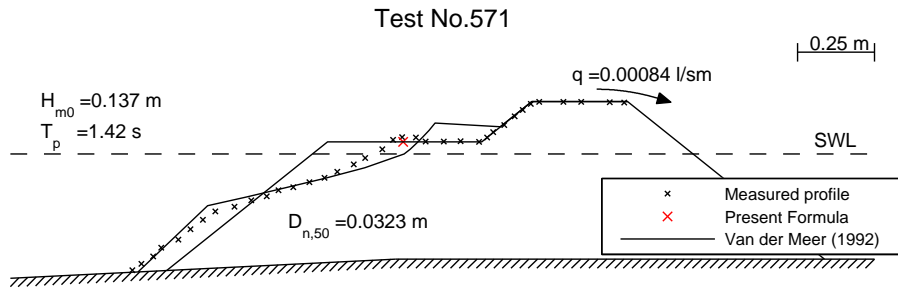
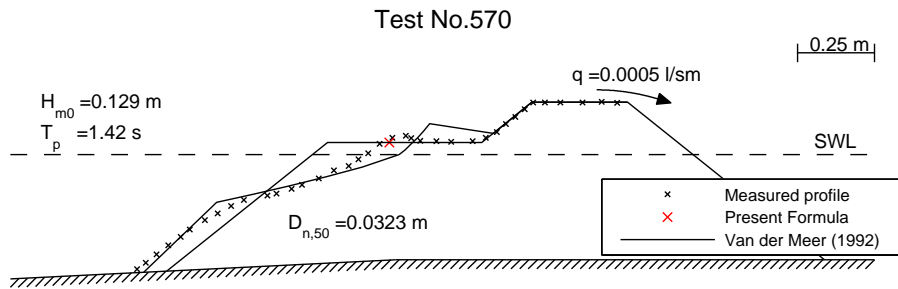


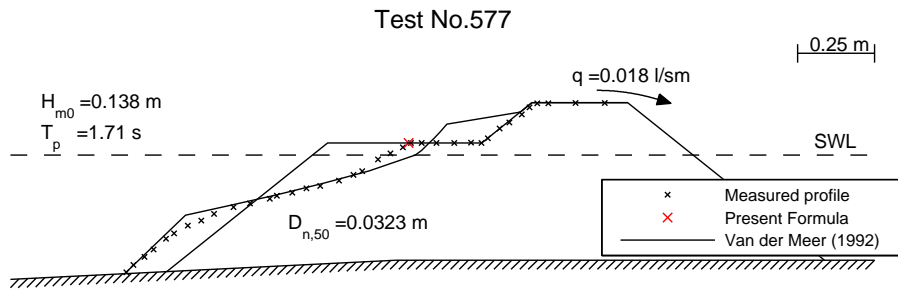
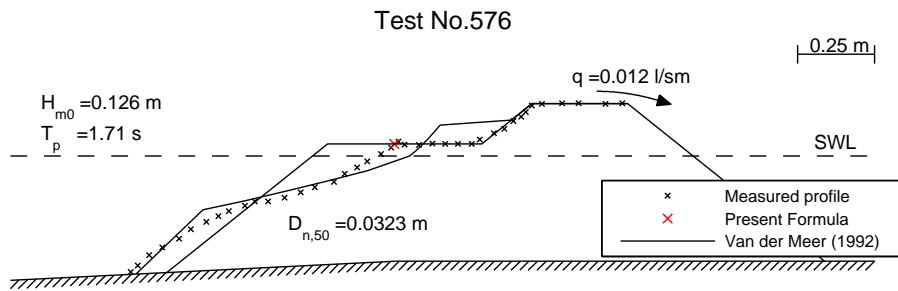
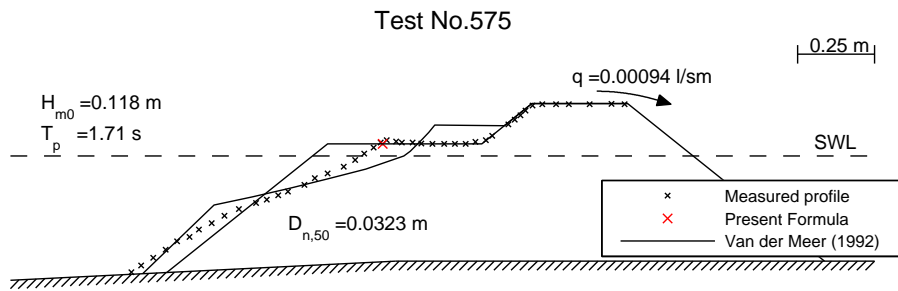
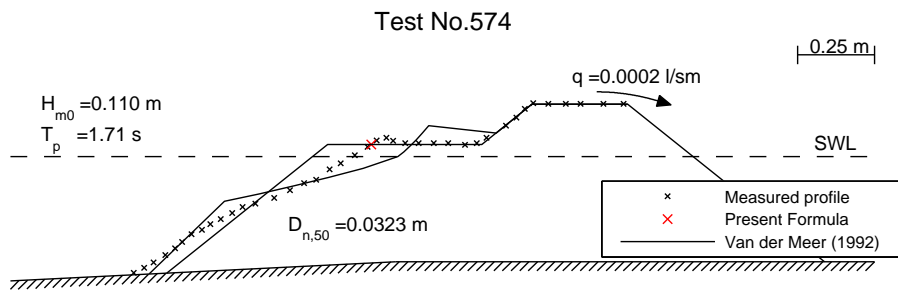
Profile Measurements from Berm Breakwater Tests



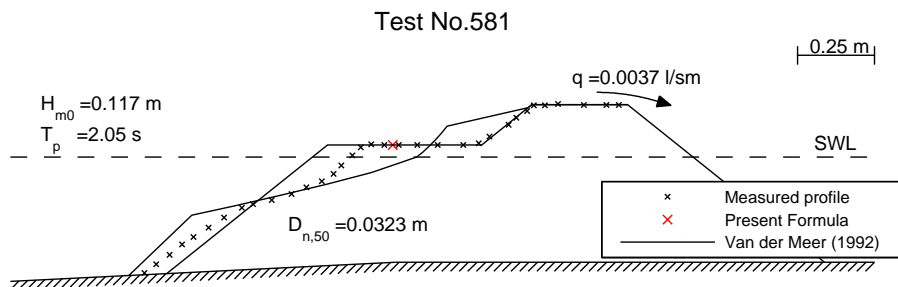
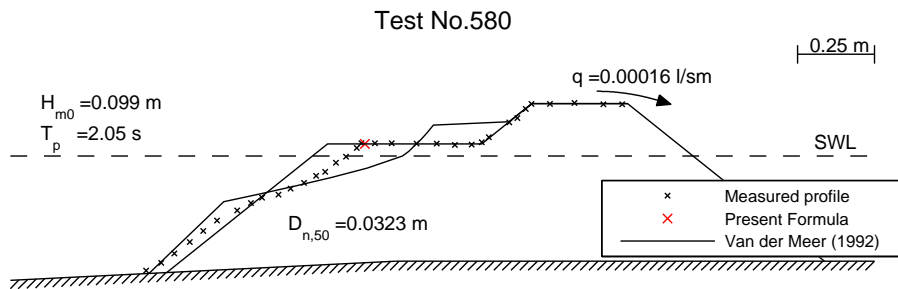
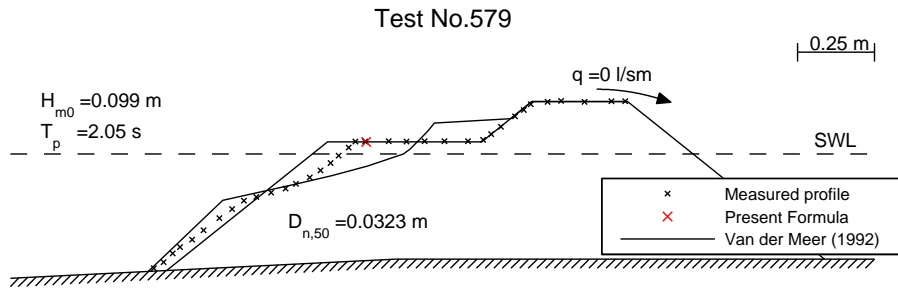
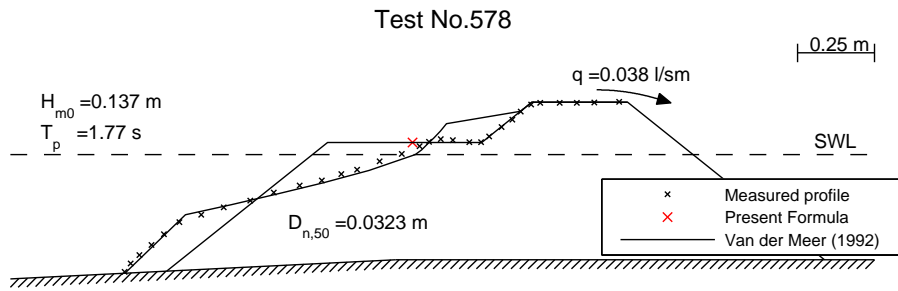


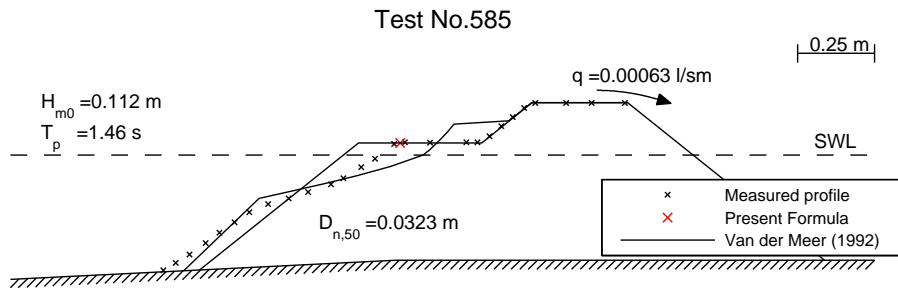
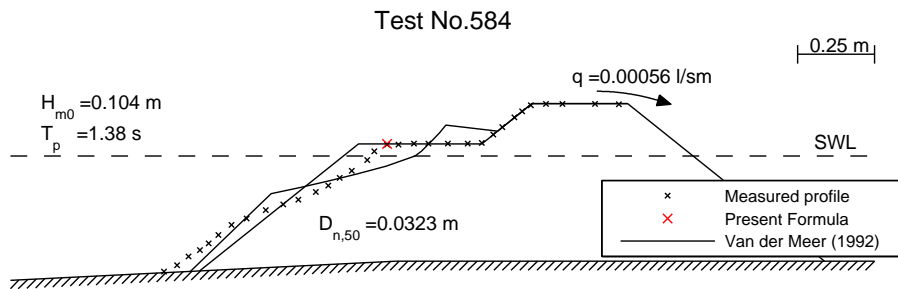
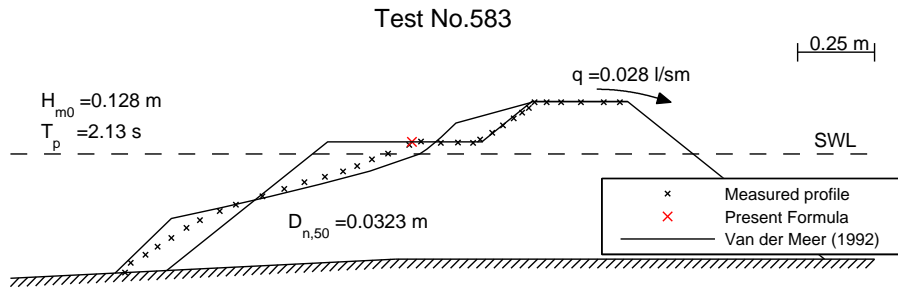
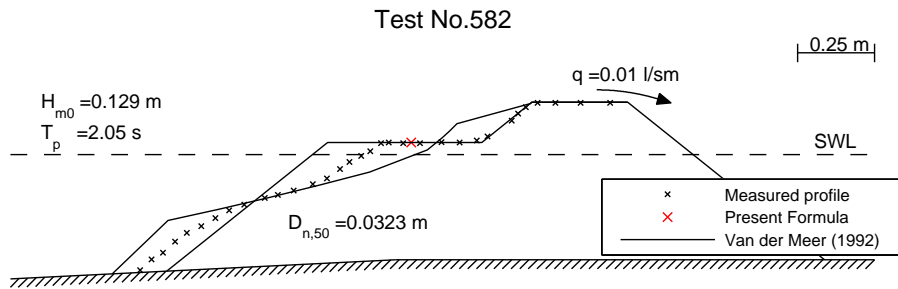
Profile Measurements from Berm Breakwater Tests



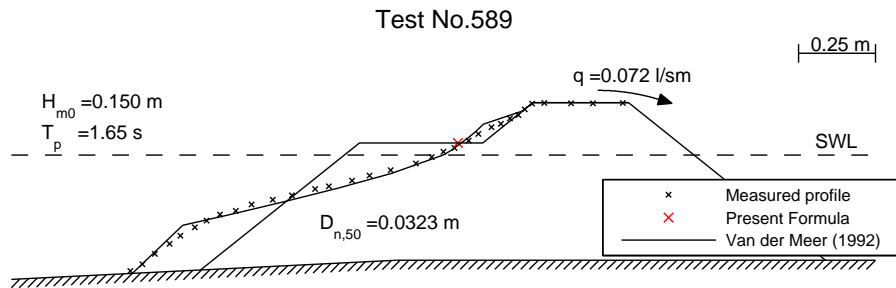
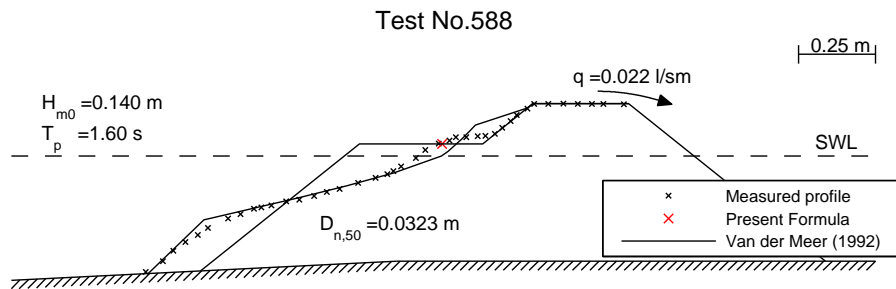
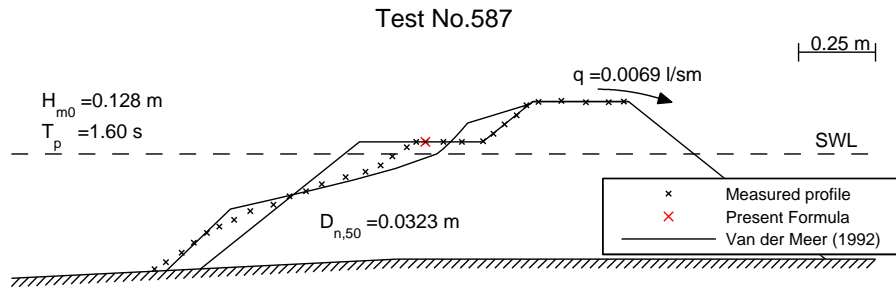
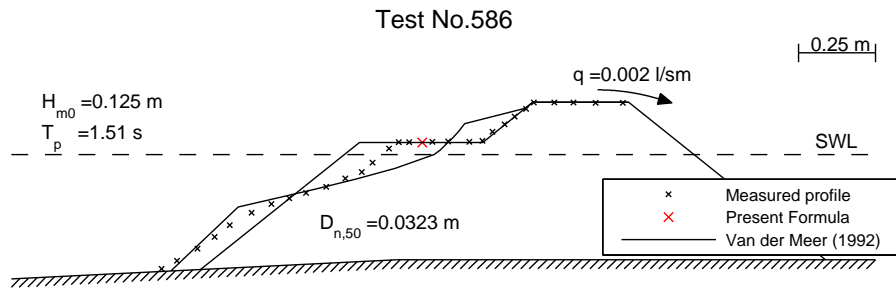


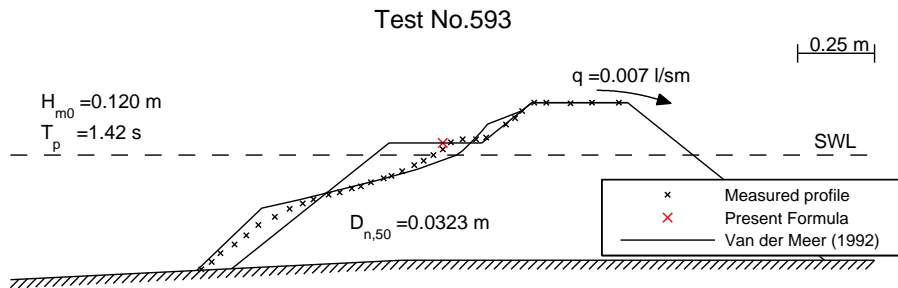
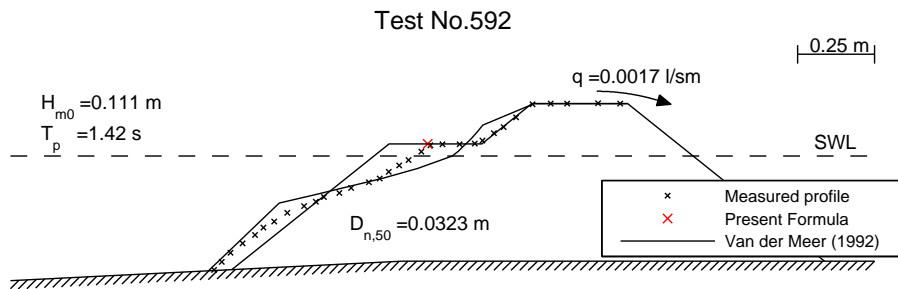
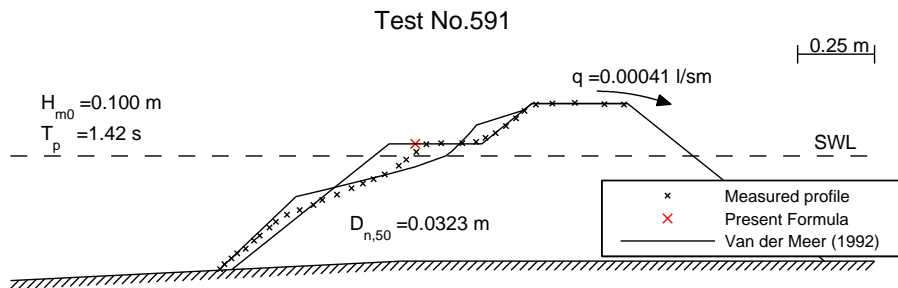
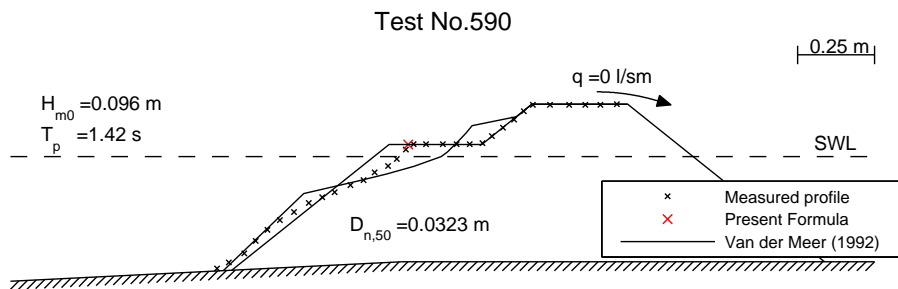
Profile Measurements from Berm Breakwater Tests



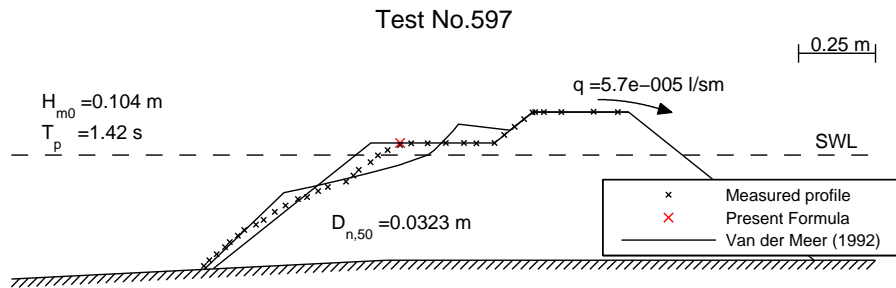
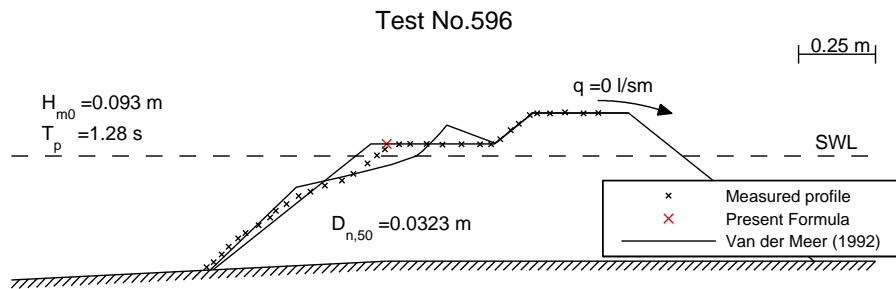
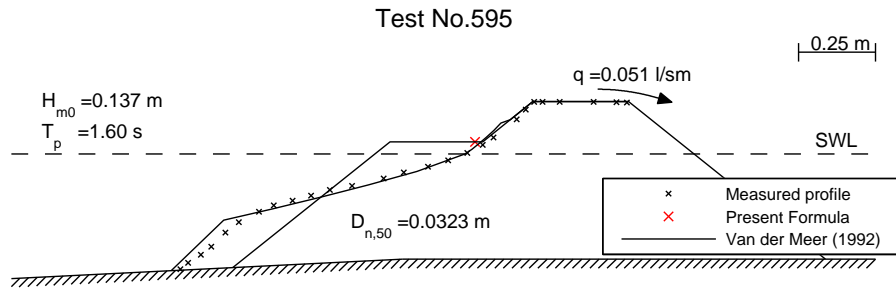
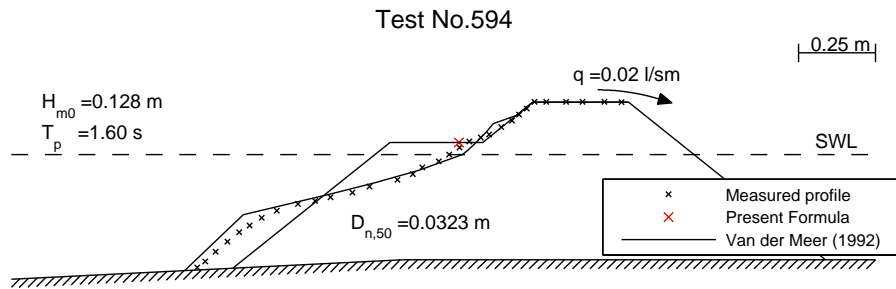


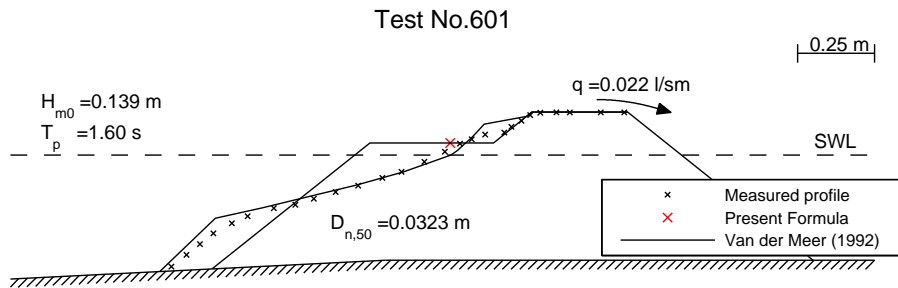
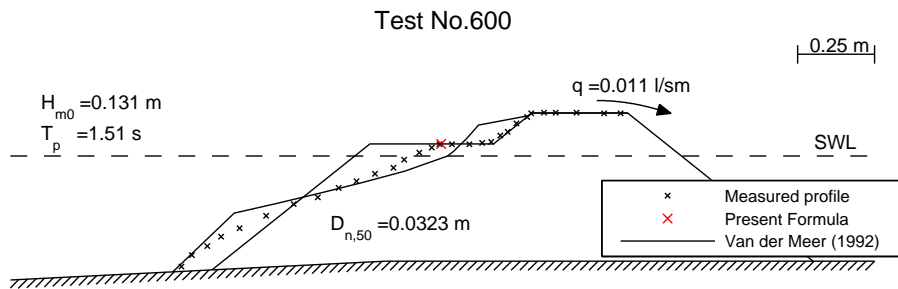
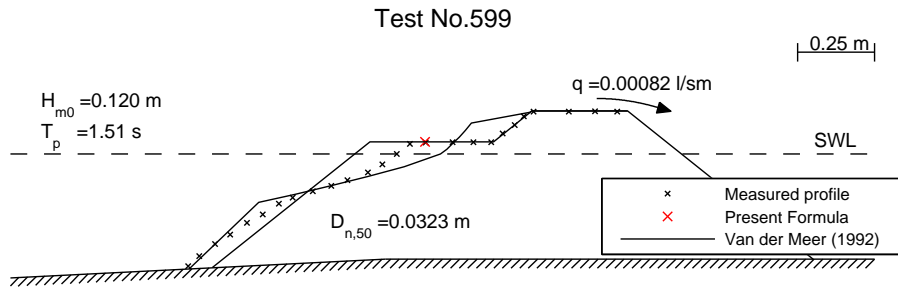
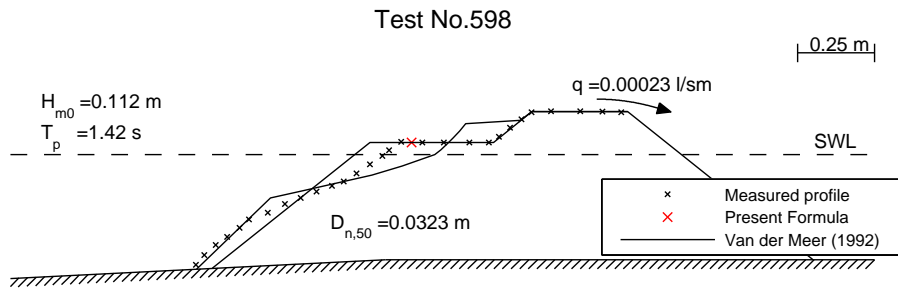
Profile Measurements from Berm Breakwater Tests



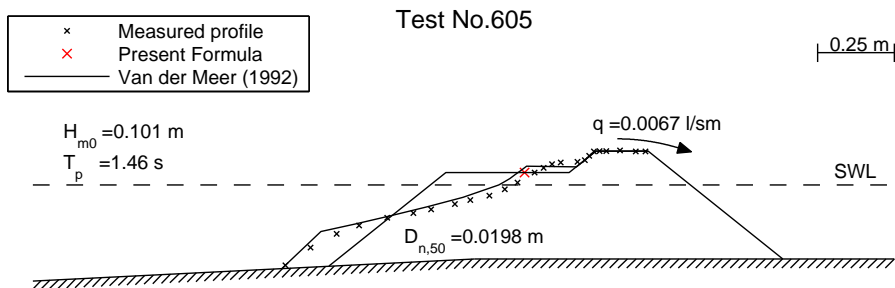
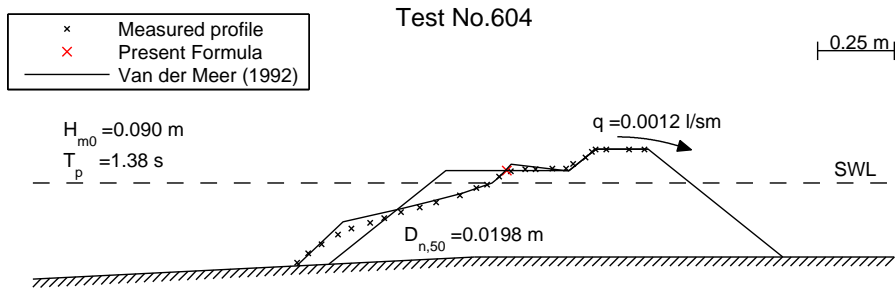
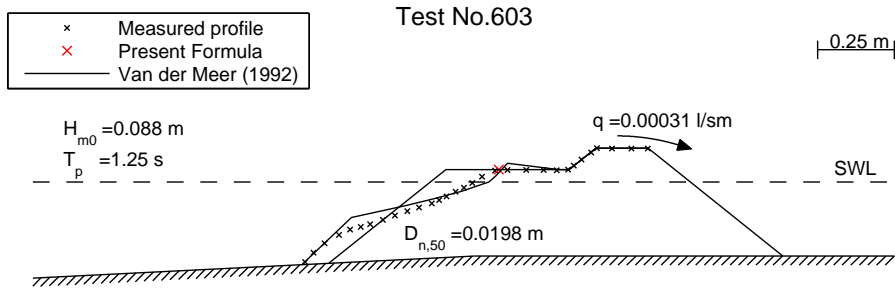
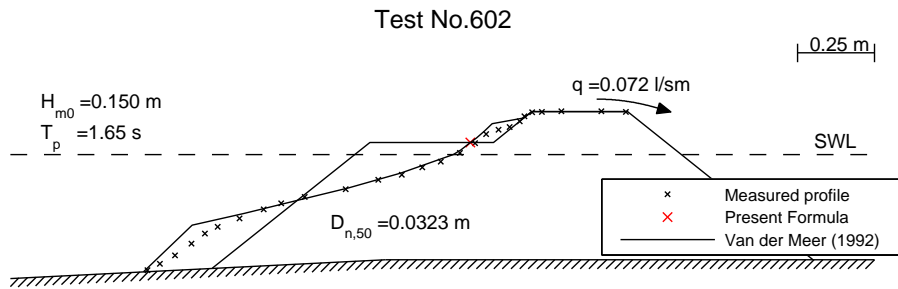


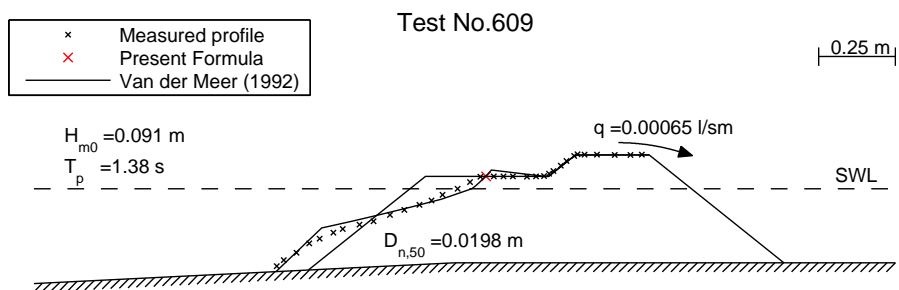
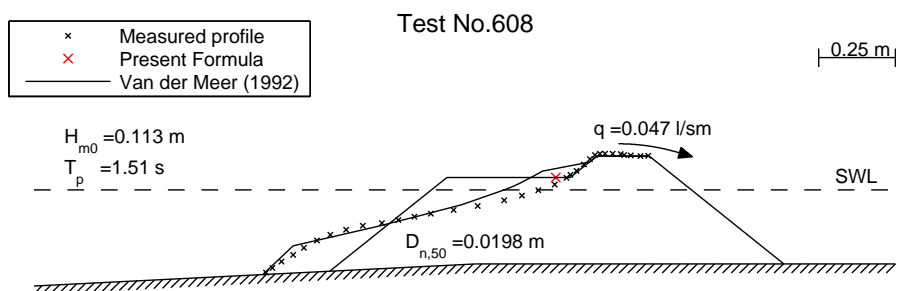
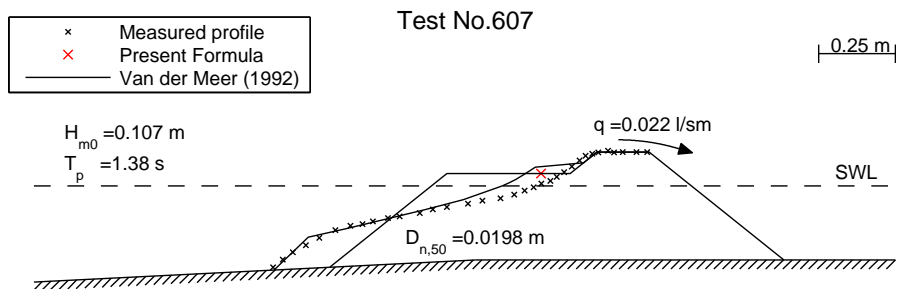
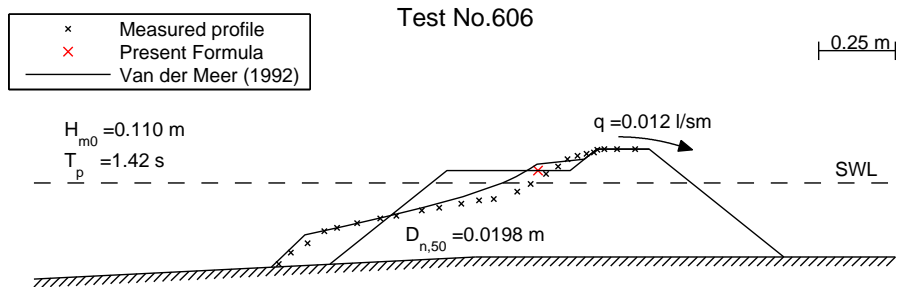
Profile Measurements from Berm Breakwater Tests



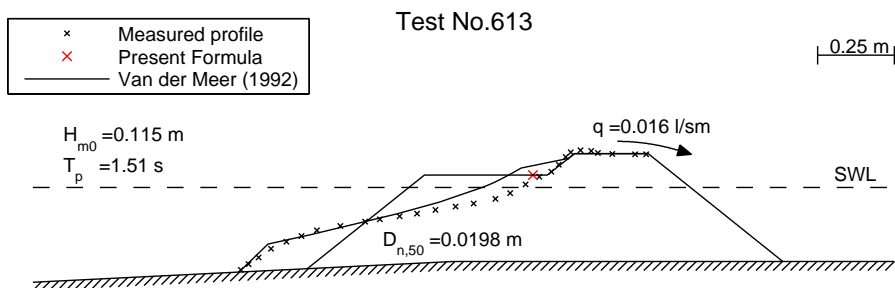
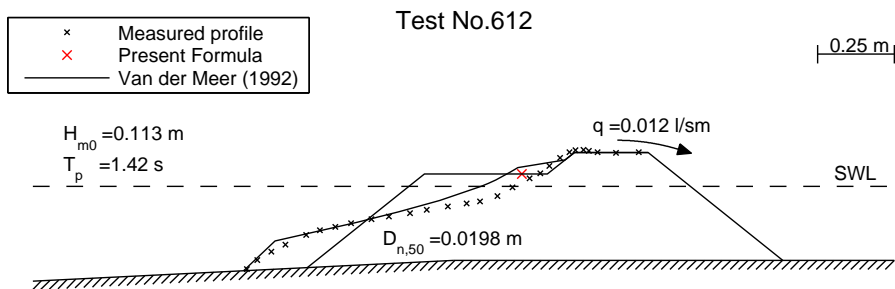
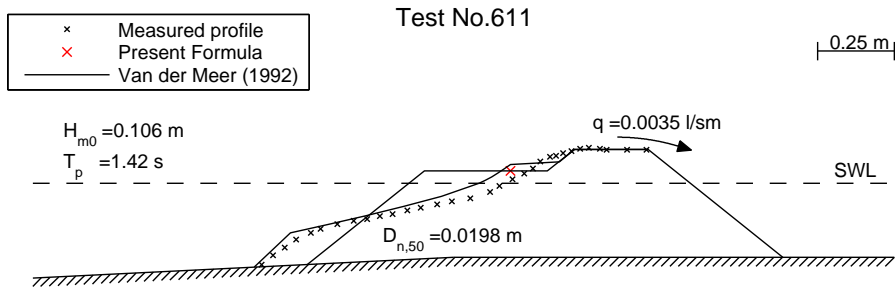
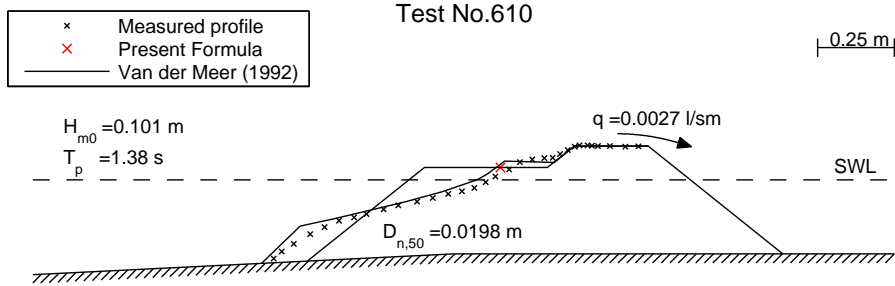


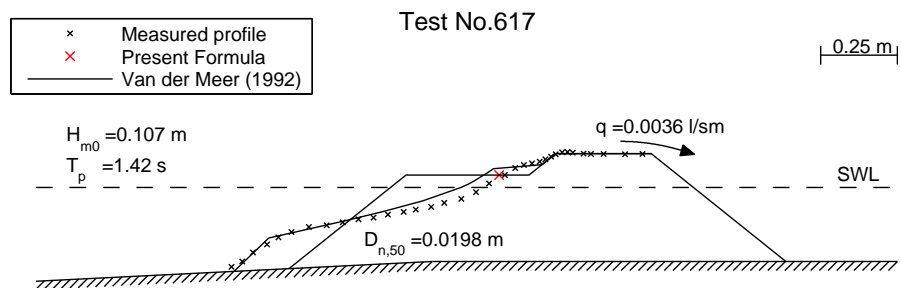
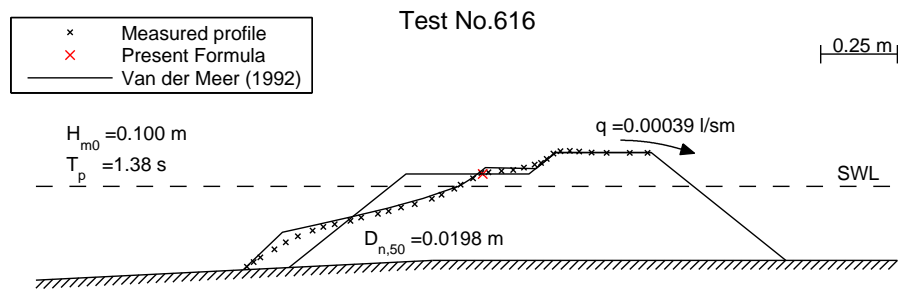
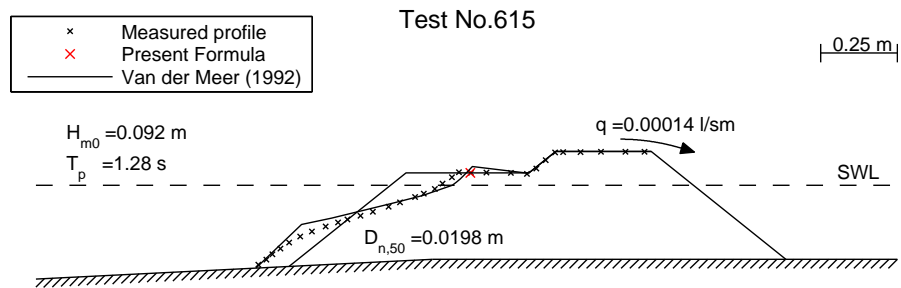
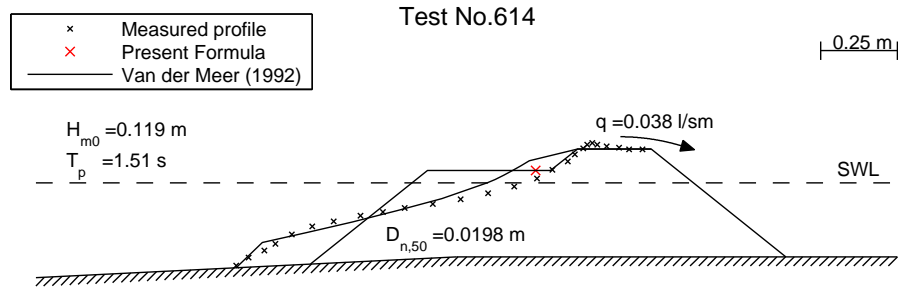
Profile Measurements from Berm Breakwater Tests



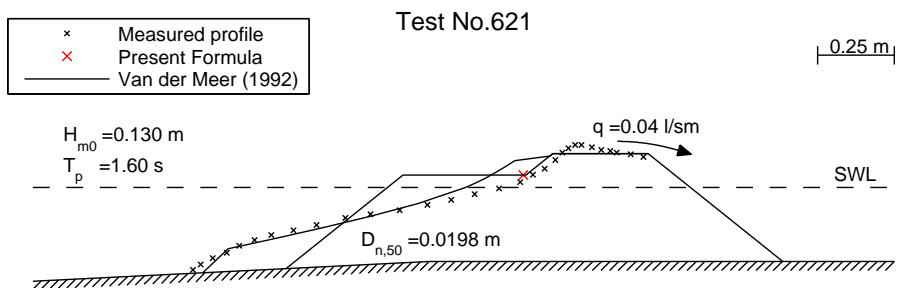
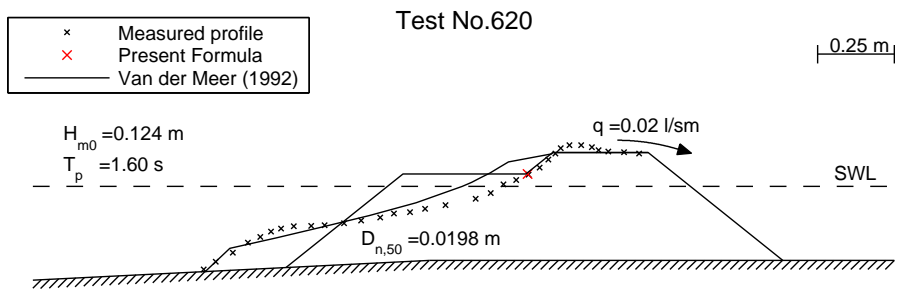
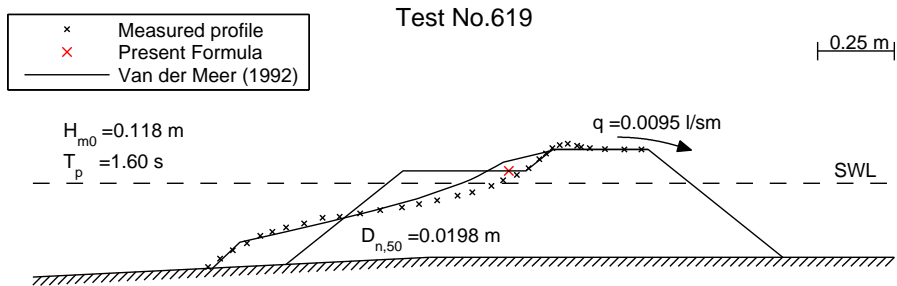
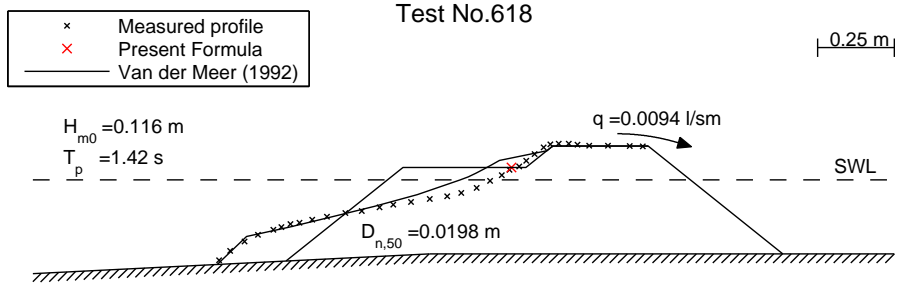


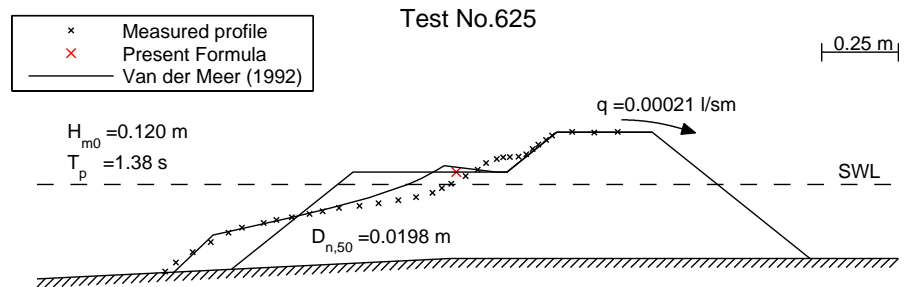
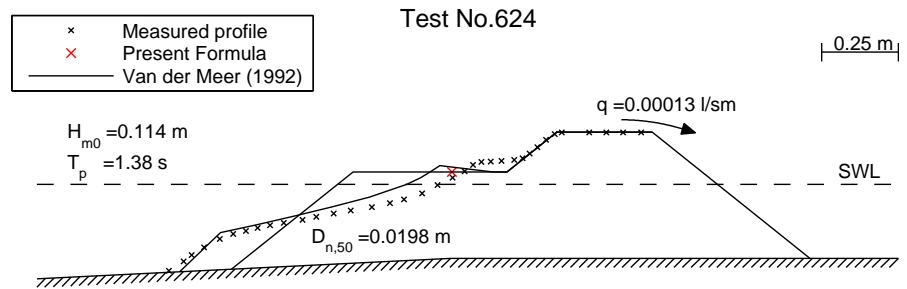
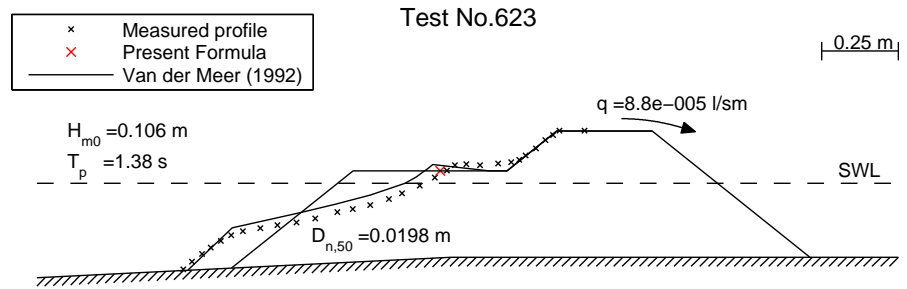
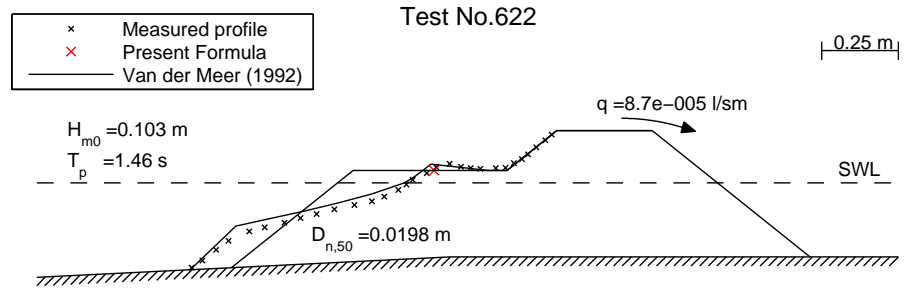
Profile Measurements from Berm Breakwater Tests



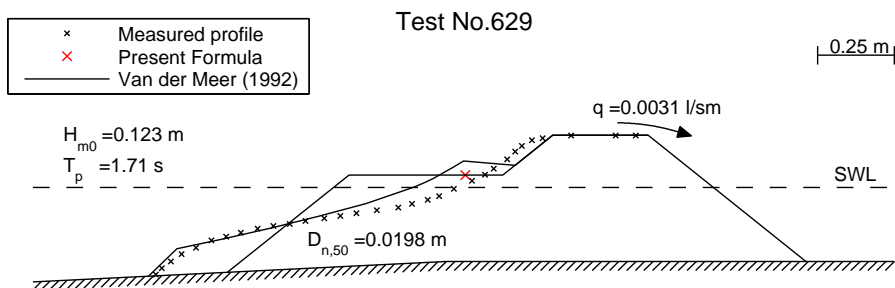
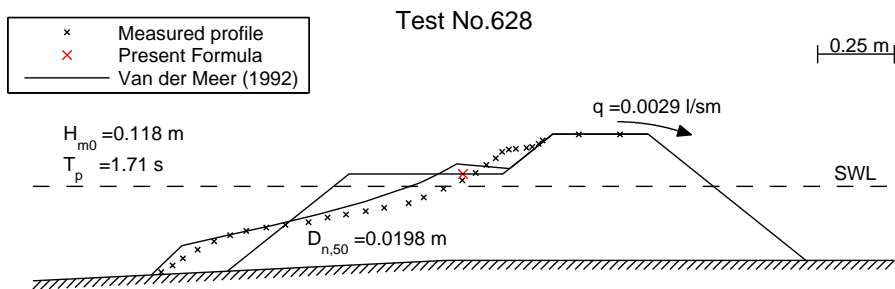
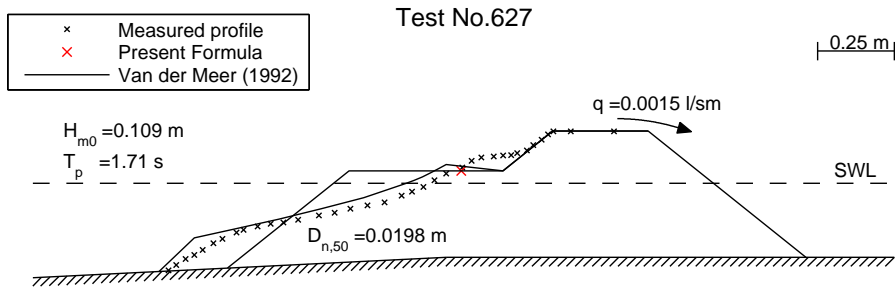
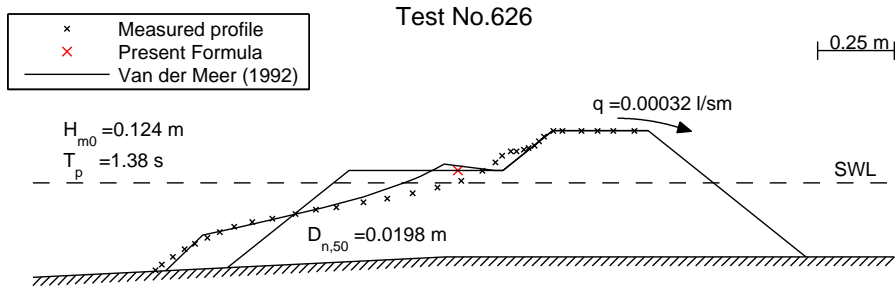


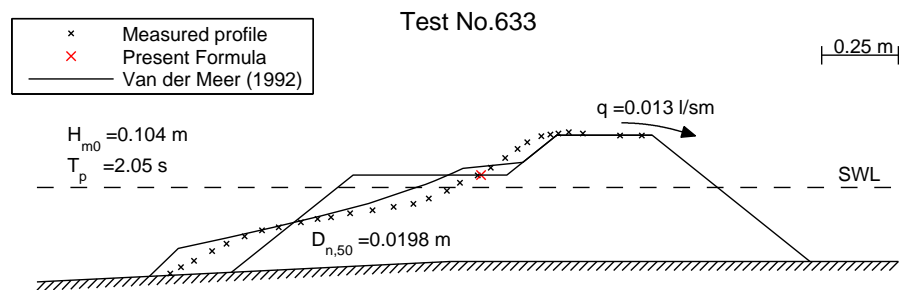
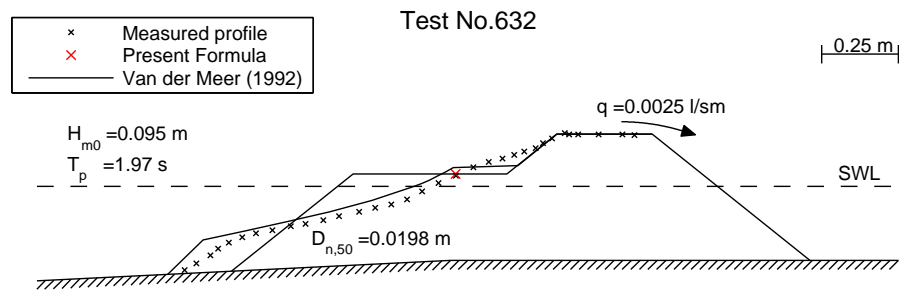
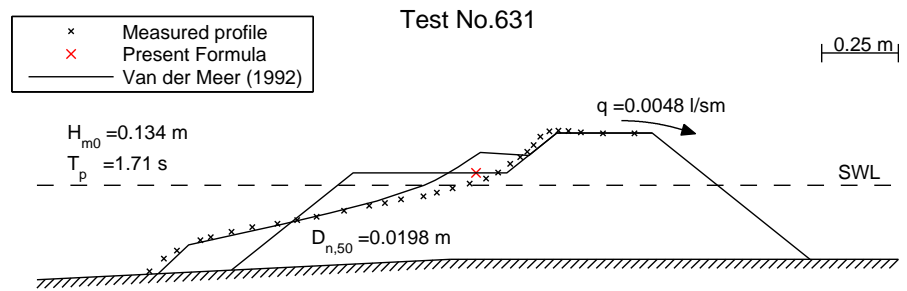
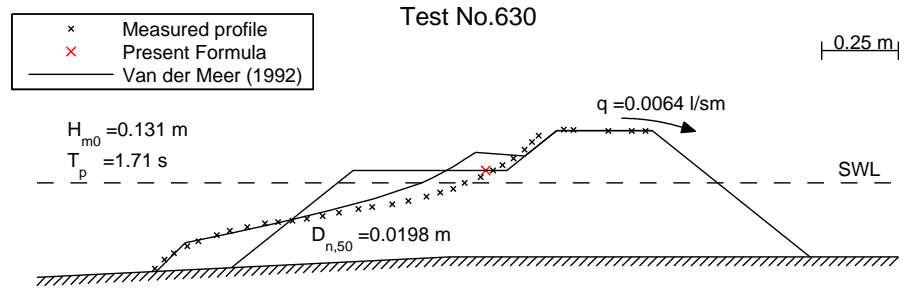
Profile Measurements from Berm Breakwater Tests



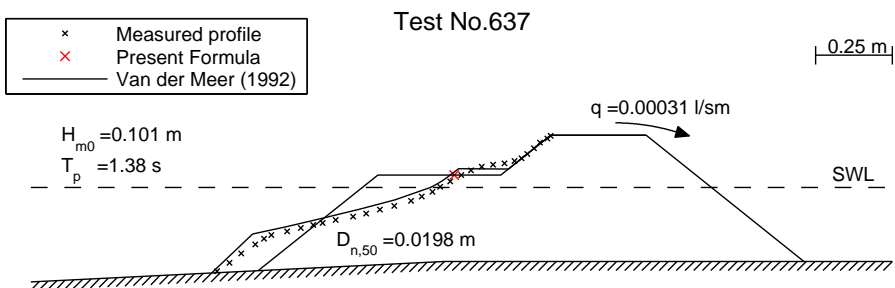
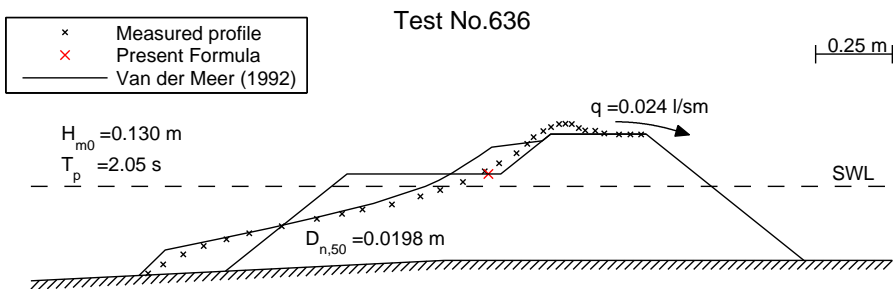
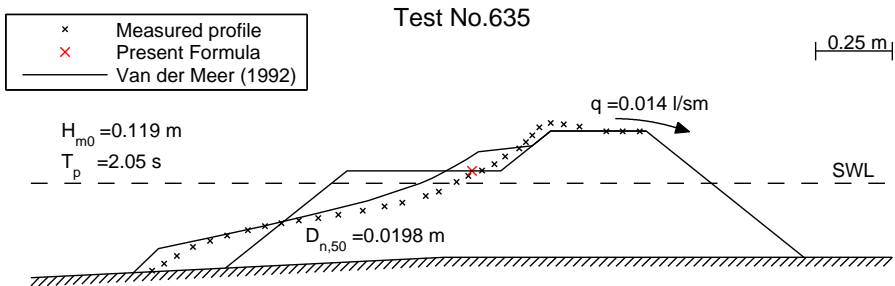
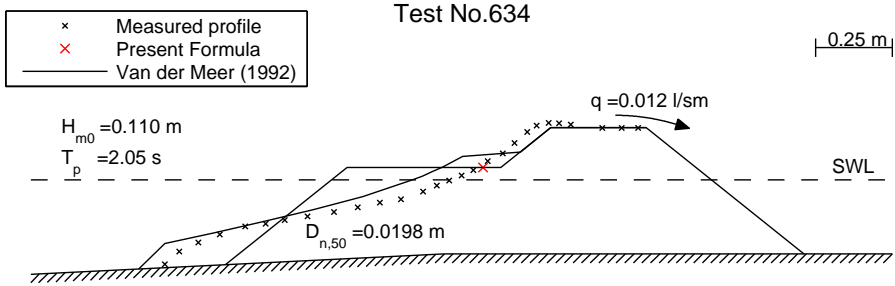


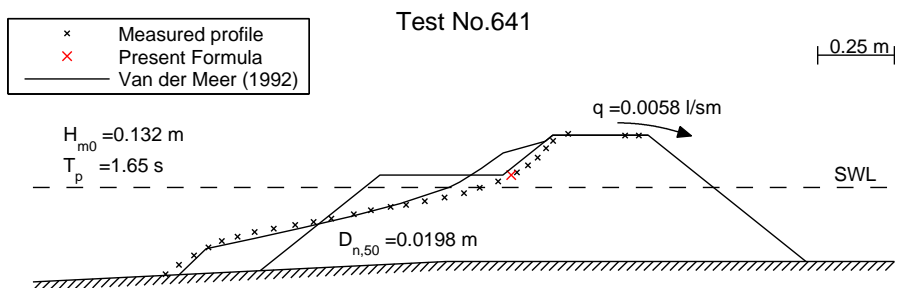
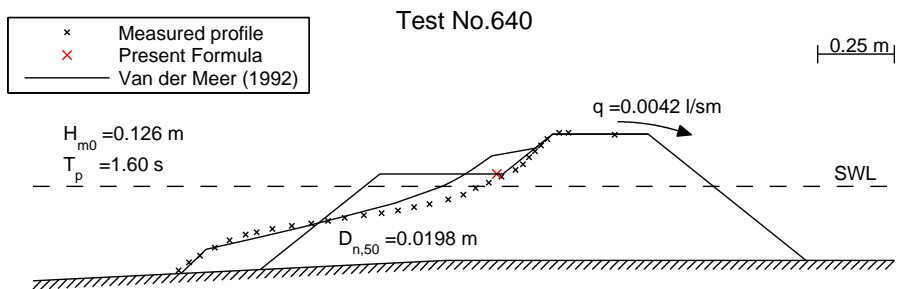
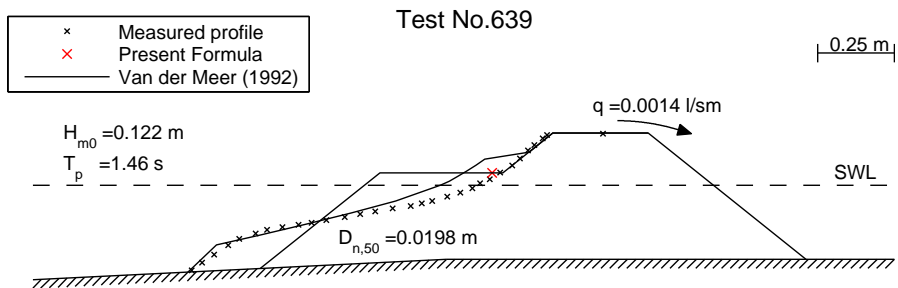
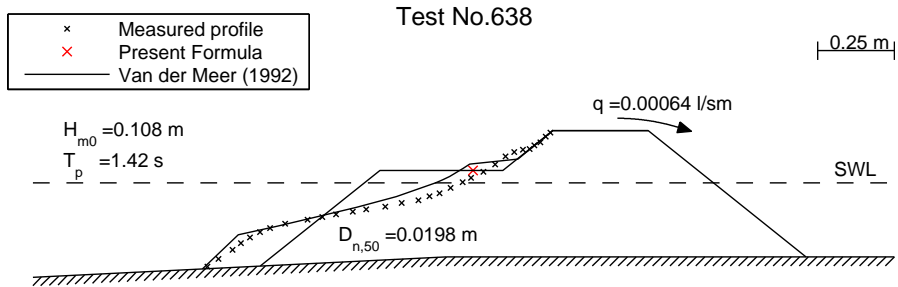
Profile Measurements from Berm Breakwater Tests



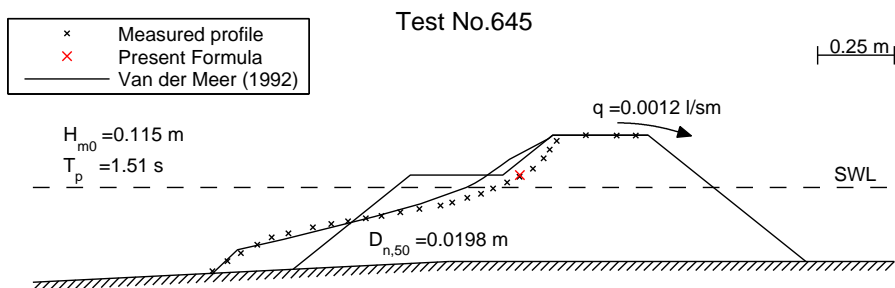
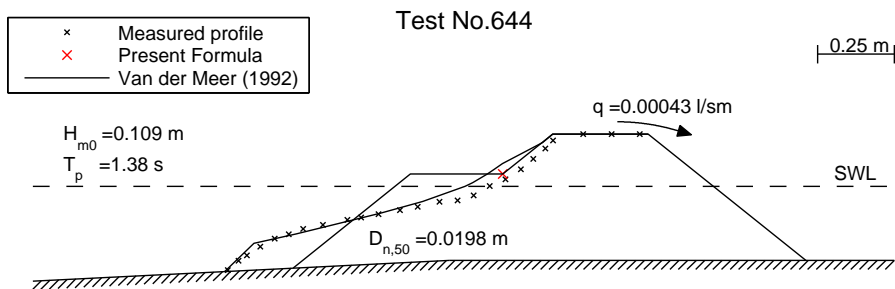
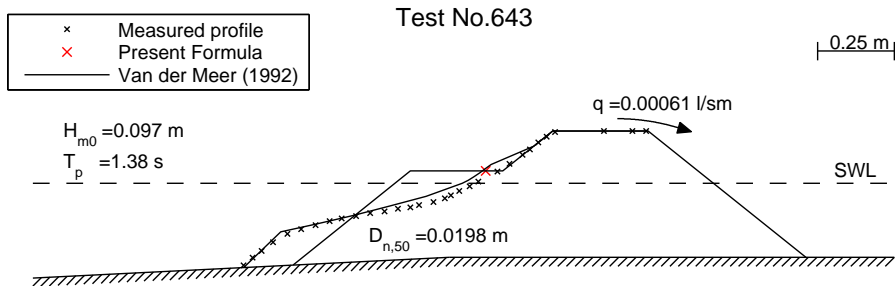
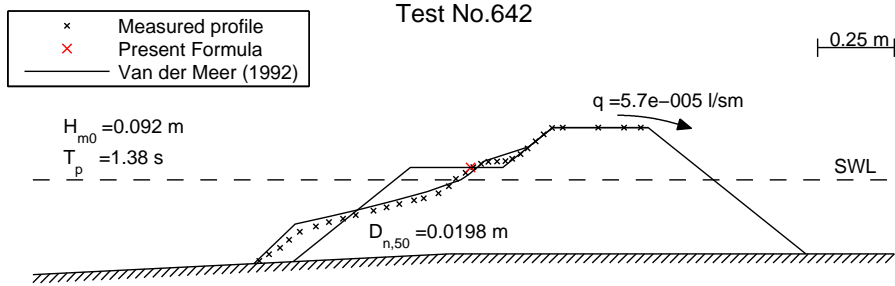


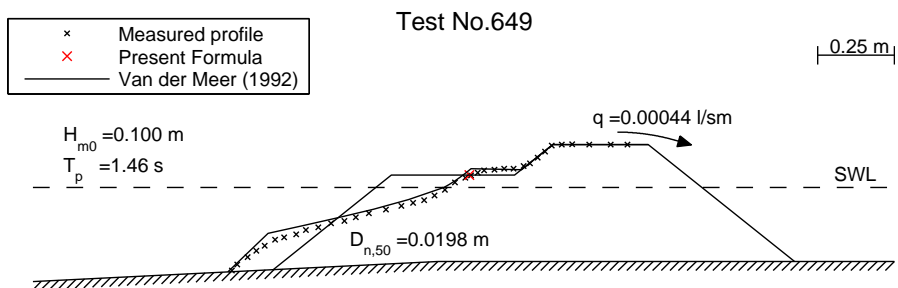
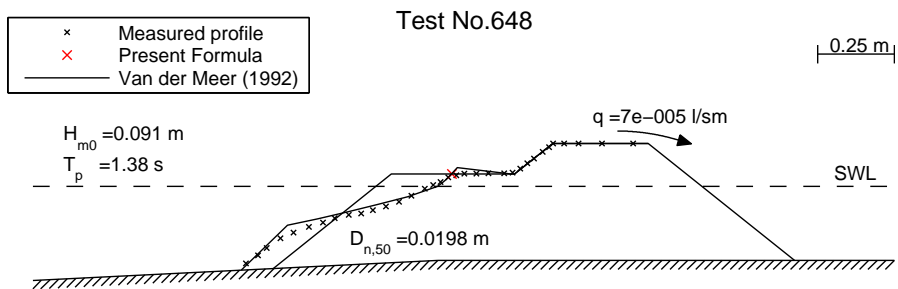
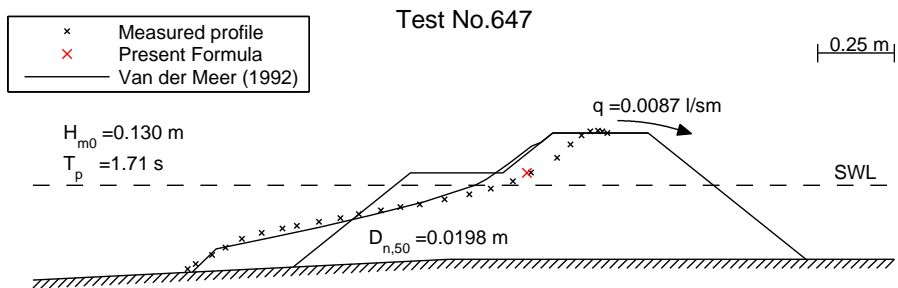
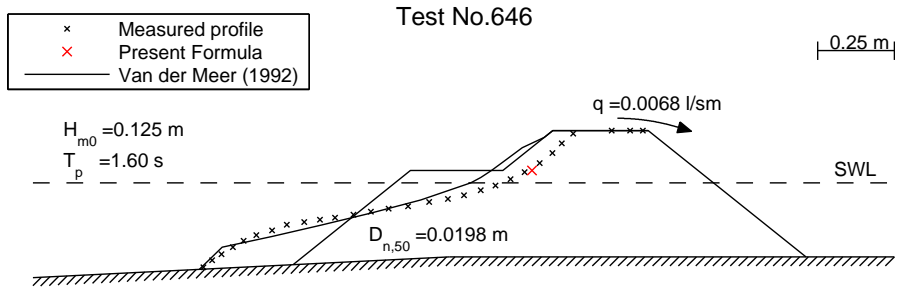
Profile Measurements from Berm Breakwater Tests



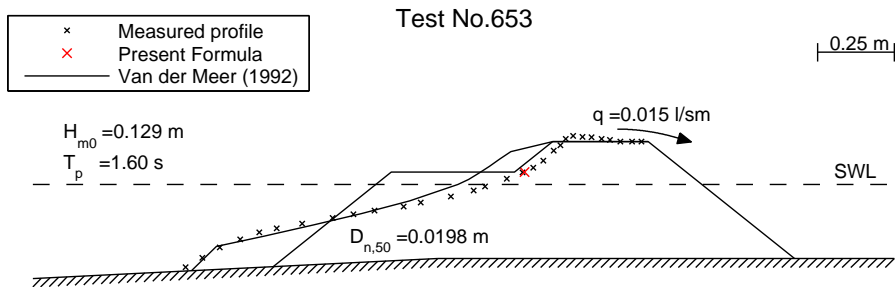
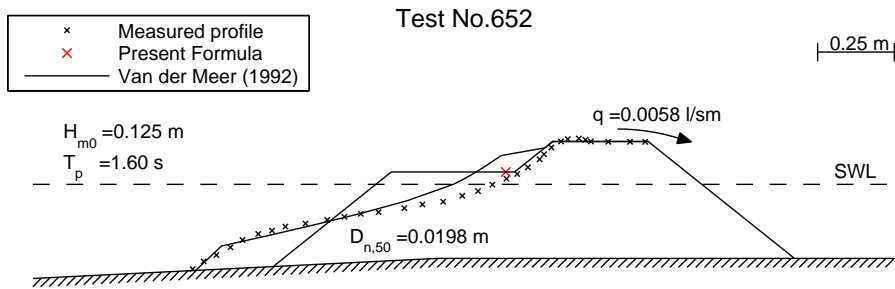
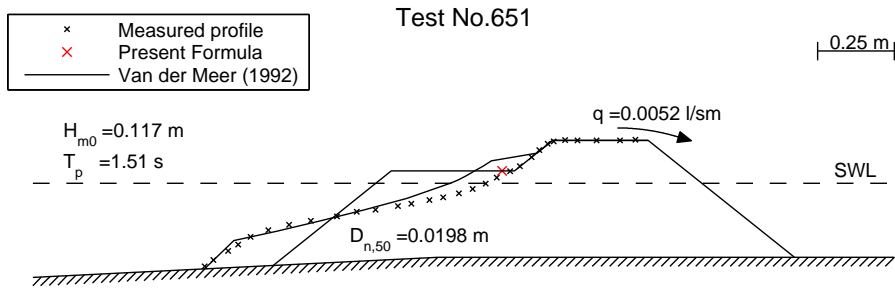
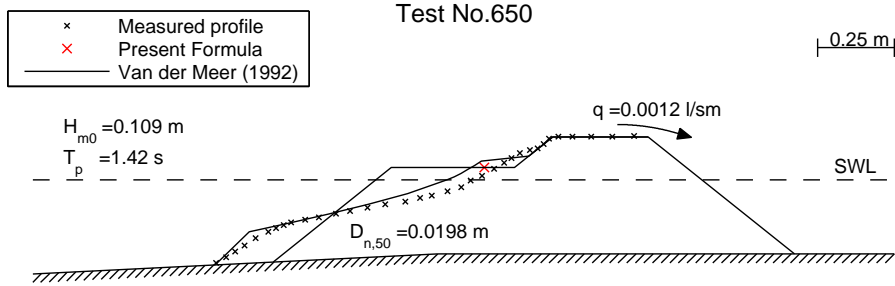


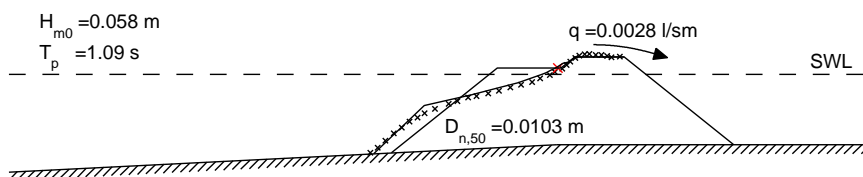
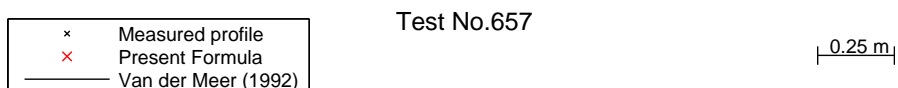
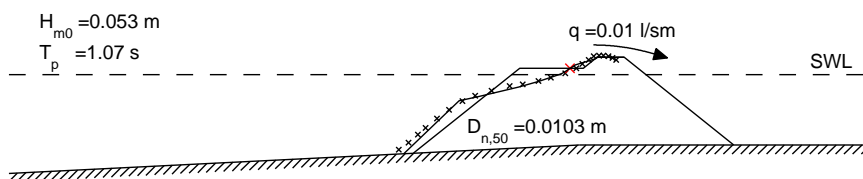
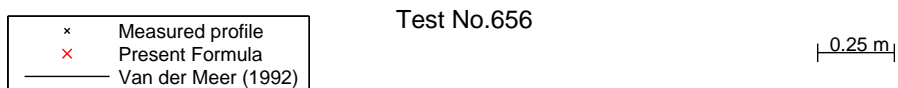
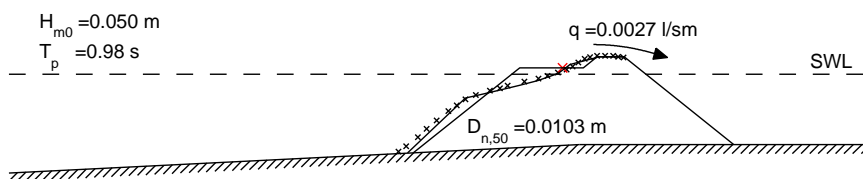
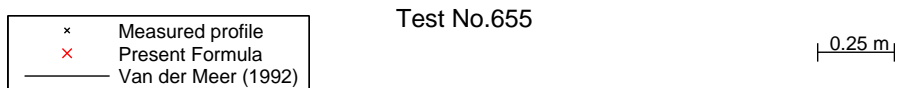
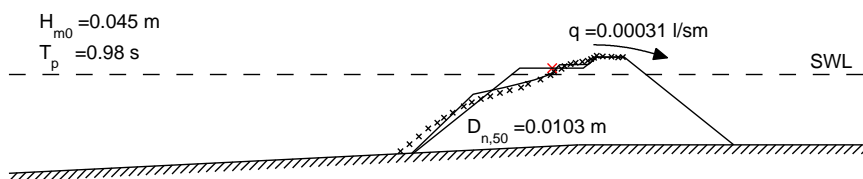
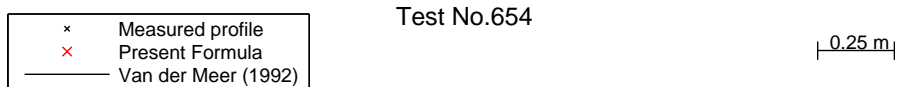
Profile Measurements from Berm Breakwater Tests



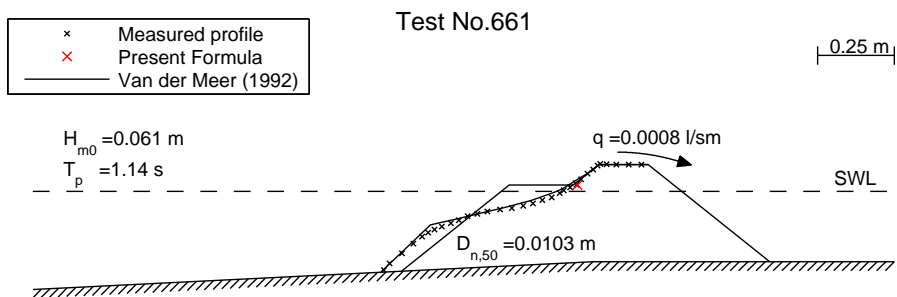
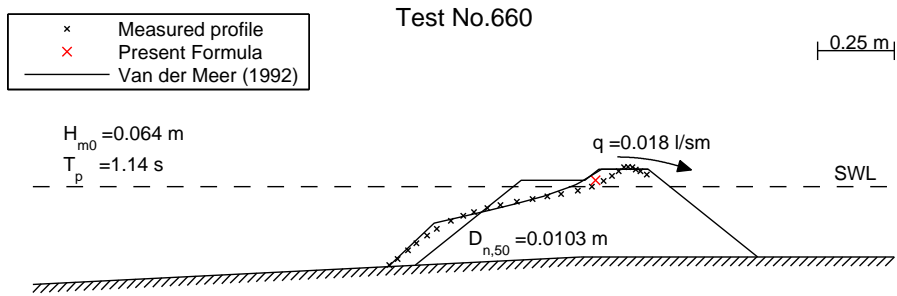
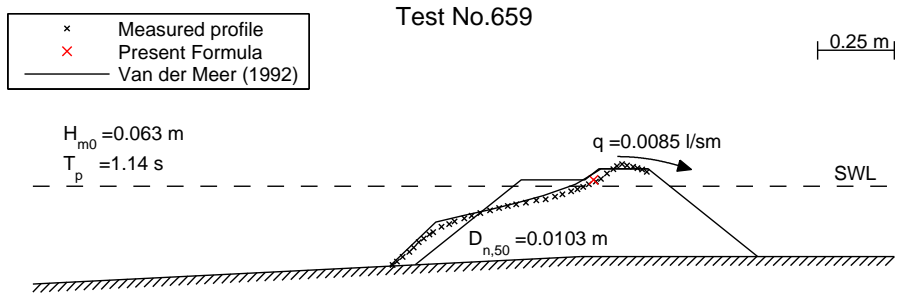
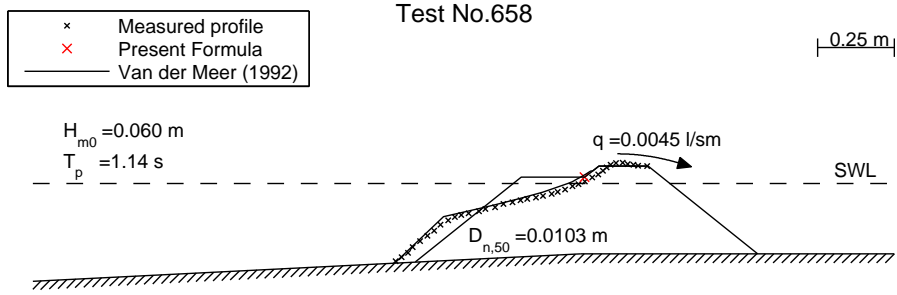


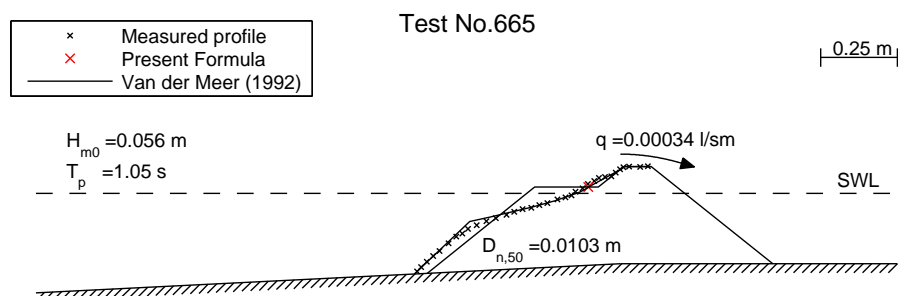
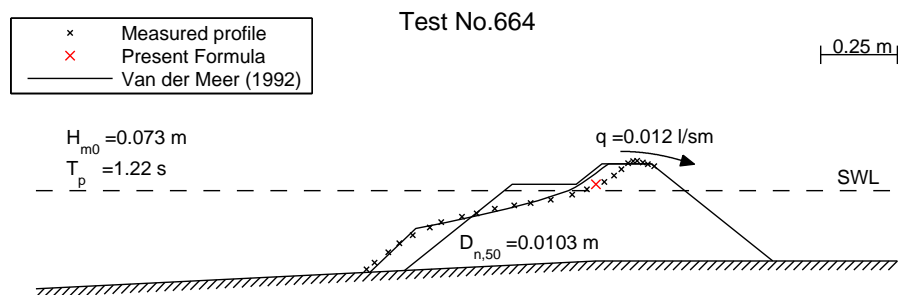
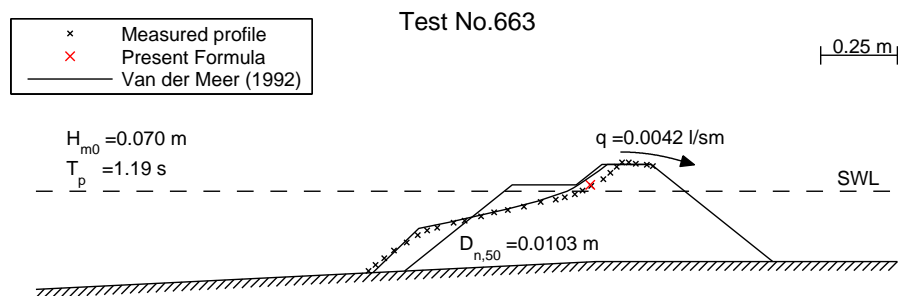
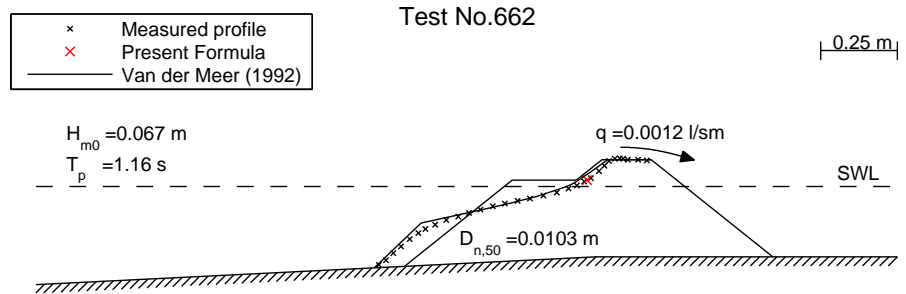
Profile Measurements from Berm Breakwater Tests



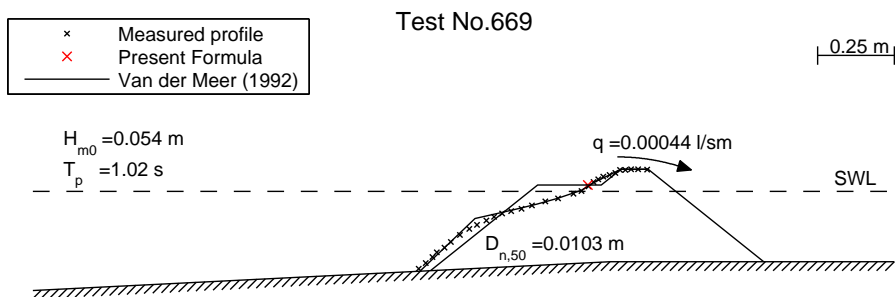
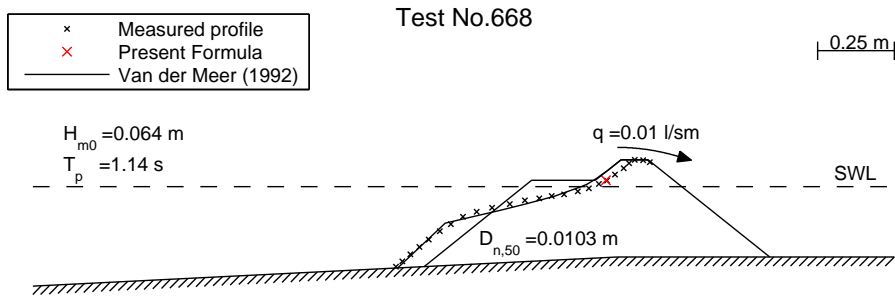
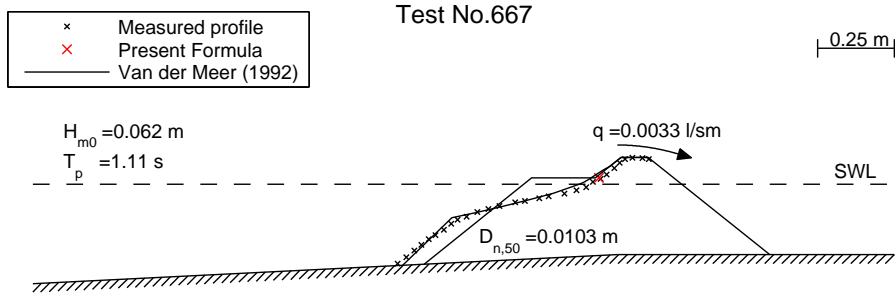
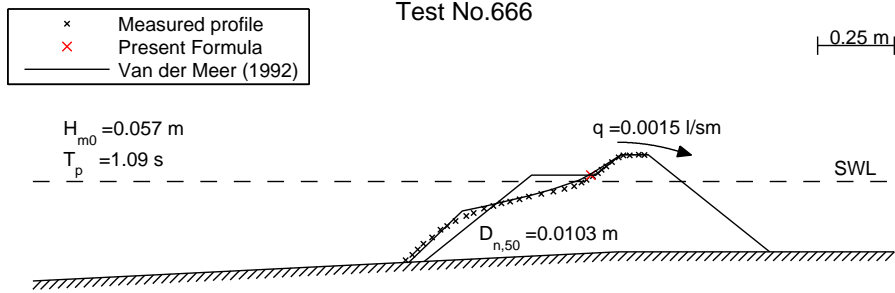


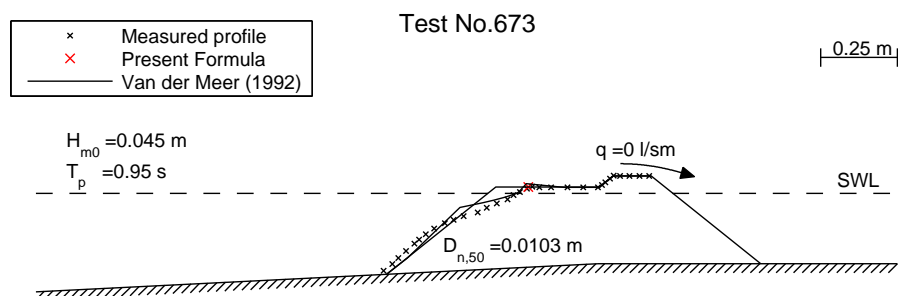
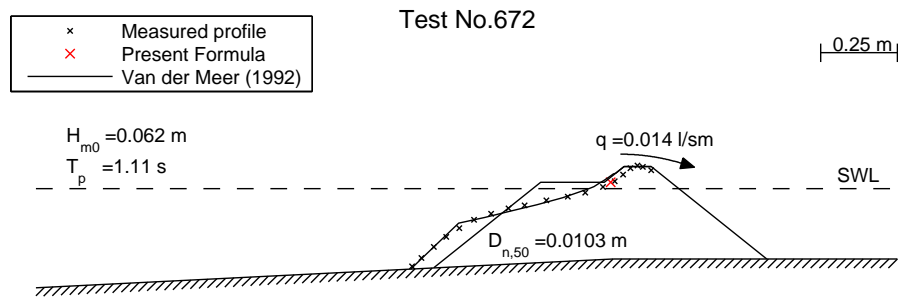
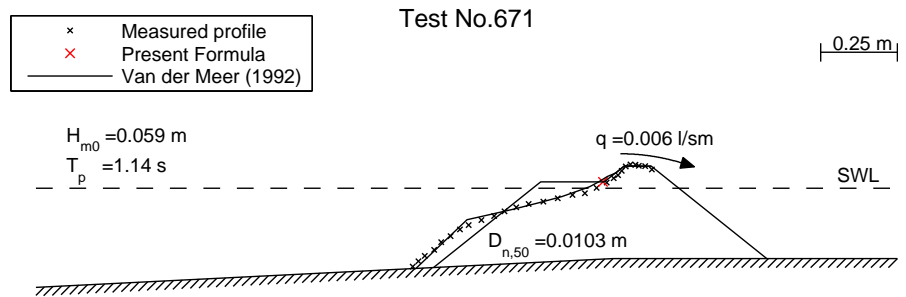
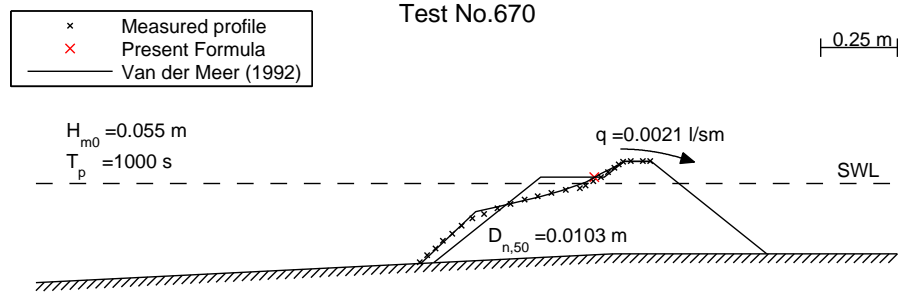
Profile Measurements from Berm Breakwater Tests



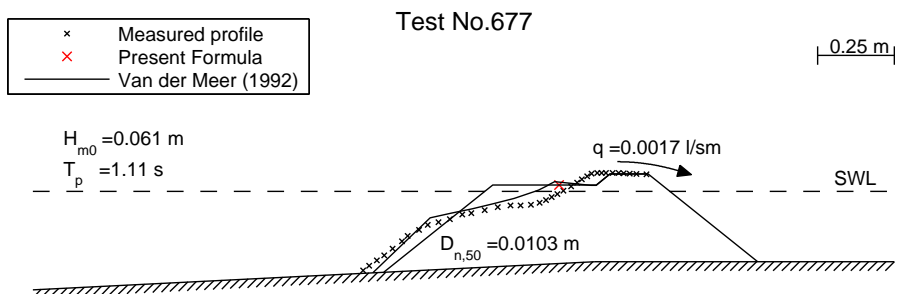
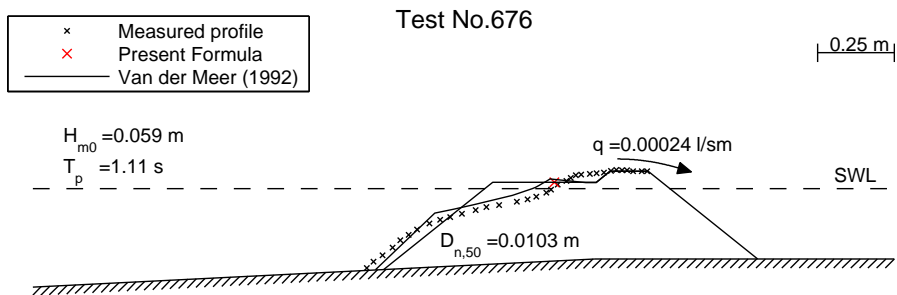
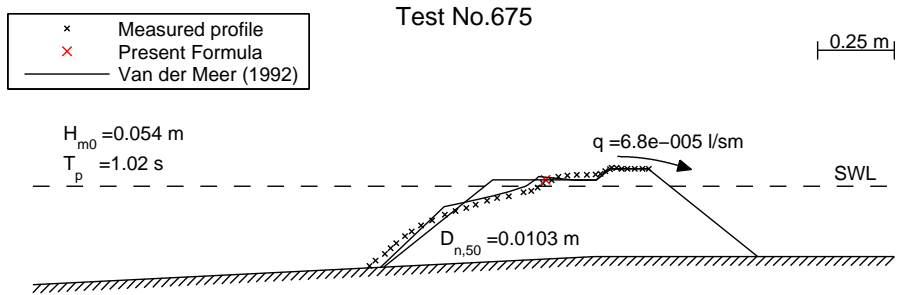
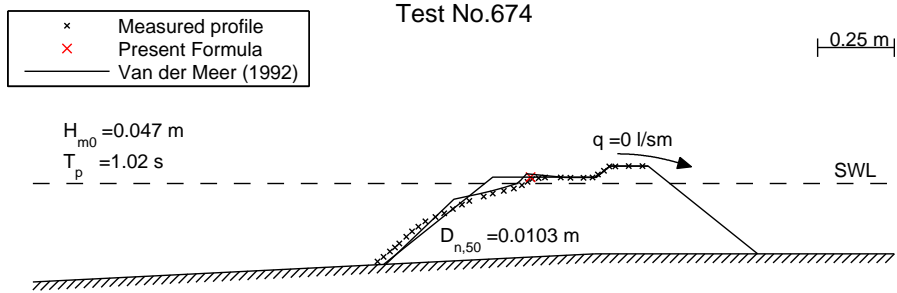


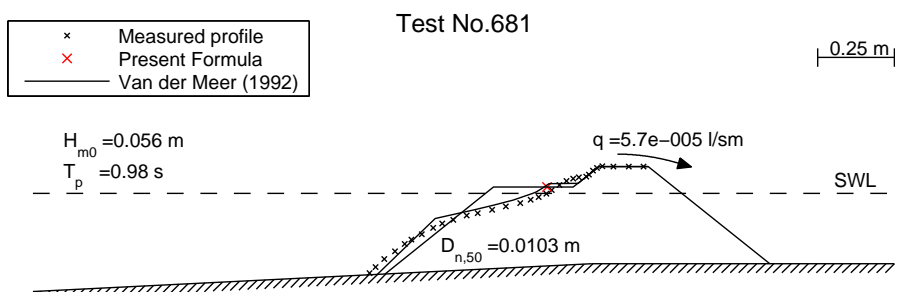
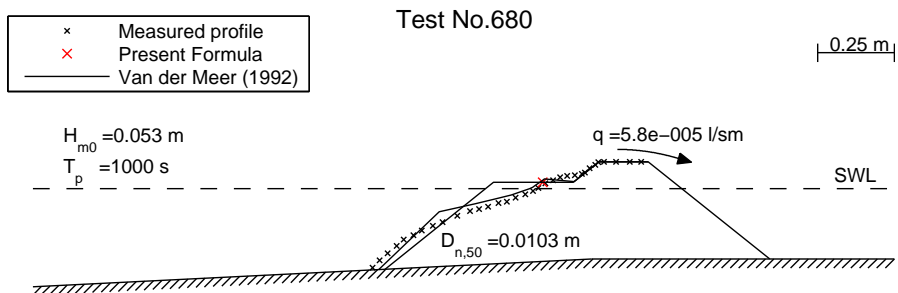
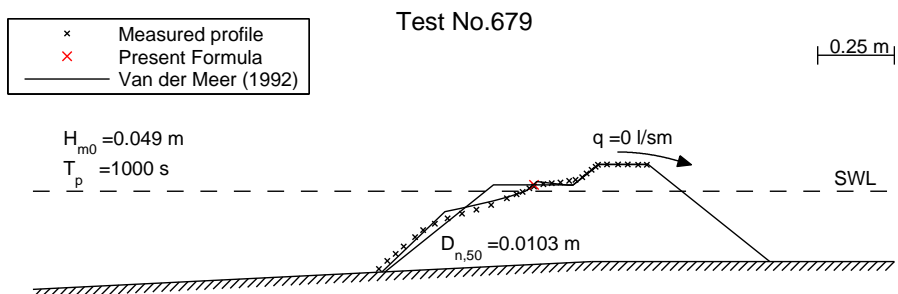
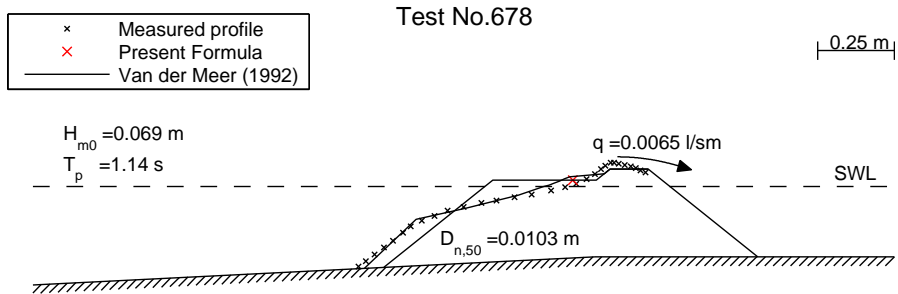
Profile Measurements from Berm Breakwater Tests



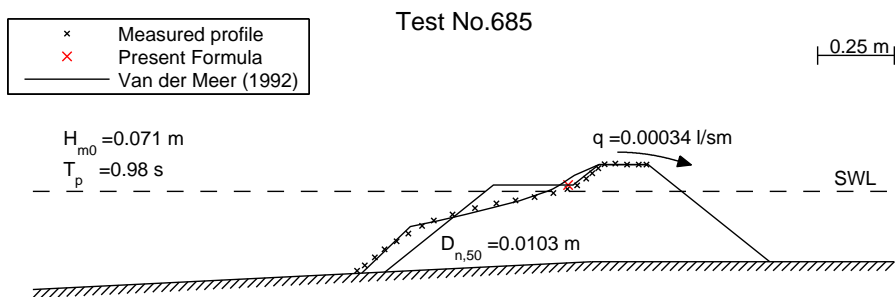
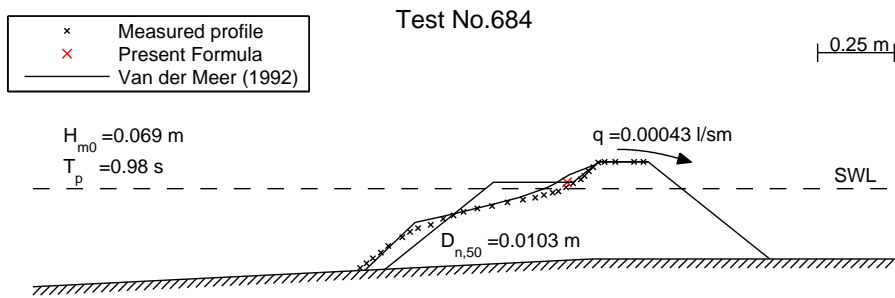
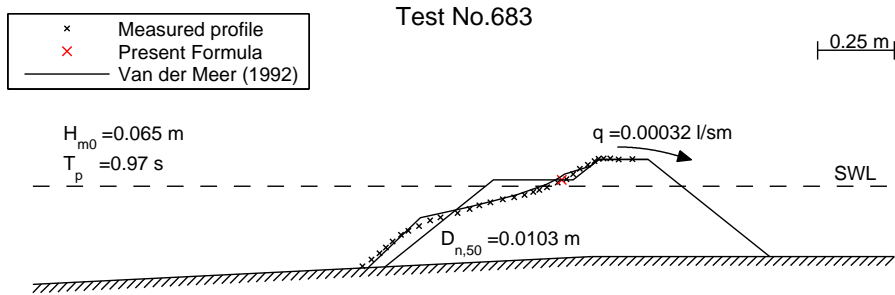
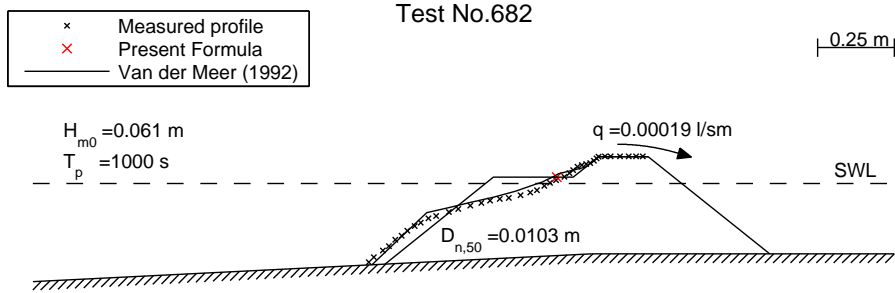


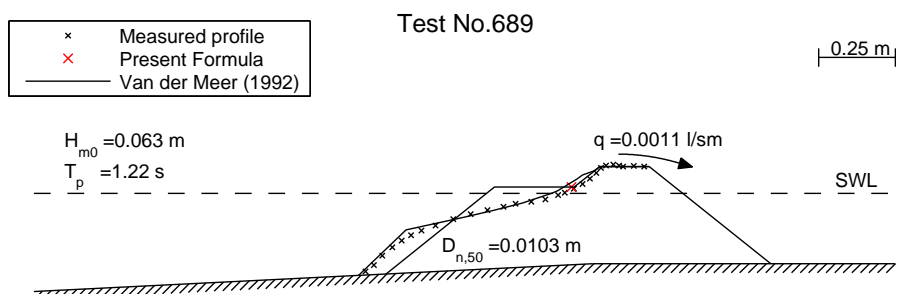
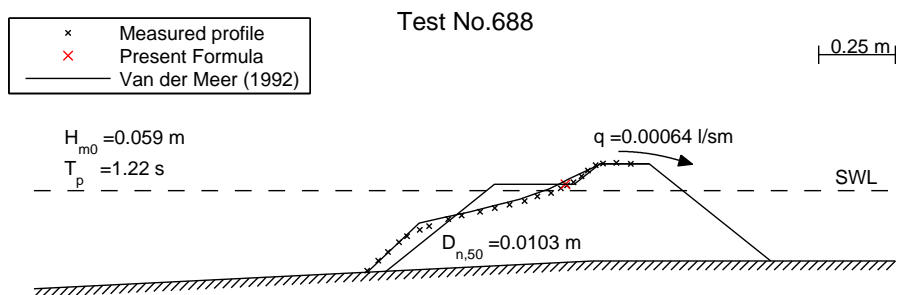
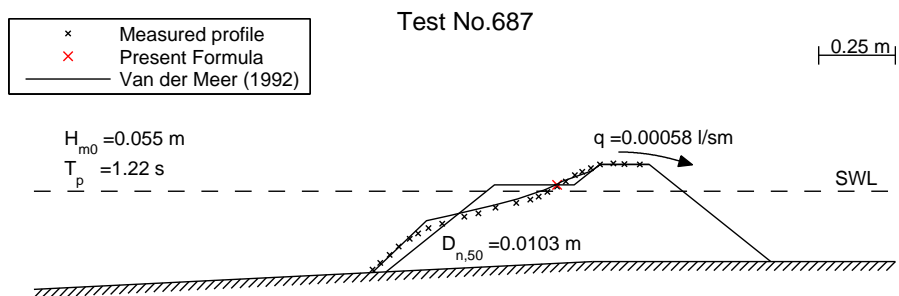
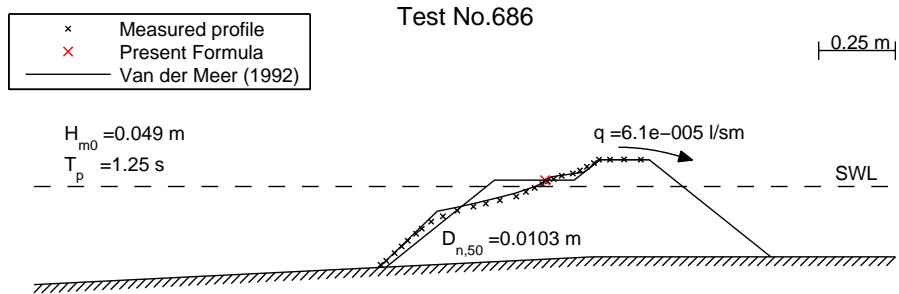
Profile Measurements from Berm Breakwater Tests





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