

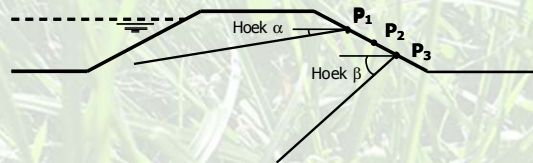
Validatie MStab met nagels

Robert Schippers, 5 september 2006

Inleiding
Systematiek
Programma's
Resultaten
Toekomst

Parameters

- **HOH-afstand: 0,5 - 1,0 - 1,5 - 2,0 m.**
- **Posities: P1, P2, P3**
- **Hoeken: $\alpha = 15^\circ$ en $\beta = 40^\circ$**
- **Nagel: stalen kern, groutomhulling, $l=20\text{m}$, $d_{\text{staaf}} = 50\text{ mm}$, $d_{\text{grout}} = 150\text{ mm}$, $F_y=600\text{ kN}$, $M_{\text{pl}}=4,4\text{ kNm}$, $EI=53,1\text{ kN/m}^2$**
- **Grondsoort: klei, $\gamma=17\text{ kN/m}^3$, $\phi=30^\circ$, $c=8\text{ kN/m}^2$**
- **Kopplaat: niet toegepast**



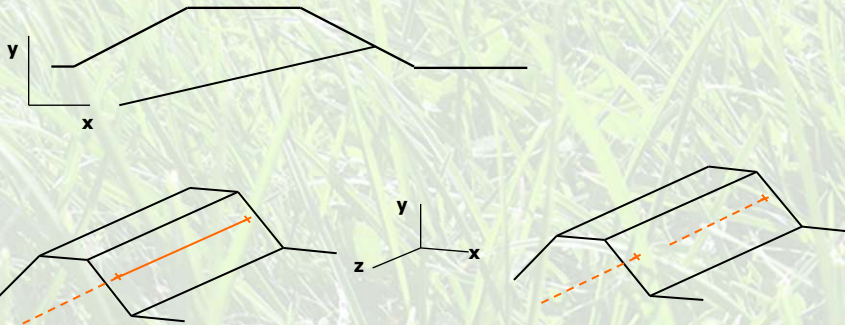
Systematiek

Programma's

- **Plaxis 2D (phi/c reductie)**
- **Plaxis 3D Tunnel (phi/c reductie)**
- **Talren '97 (PI en qs) (Bisshop)**
- **MStab 9.10 (PI en qs) (Bisshop)**
- **MStab 9.10 (Cc/1+e0 en bond stress) (Bisshop)**
- **Kopplaat: niet toegepast**

Programma's

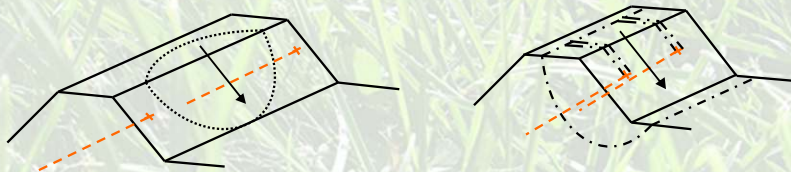
Verschillen 2 D / 3D



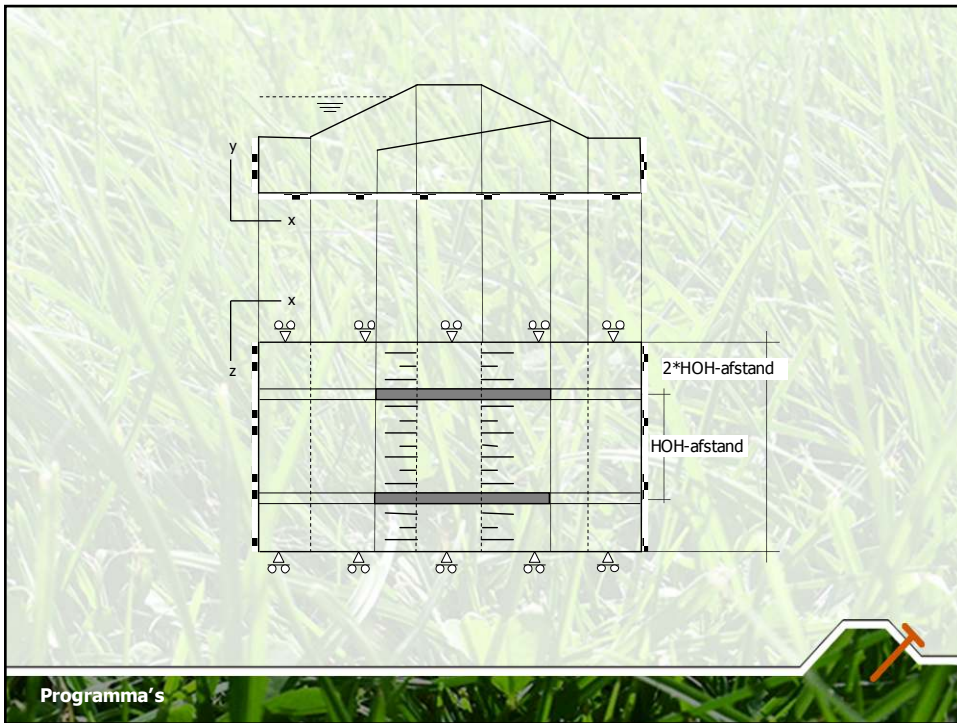
Programma's

Driedimensionaal mechanisme

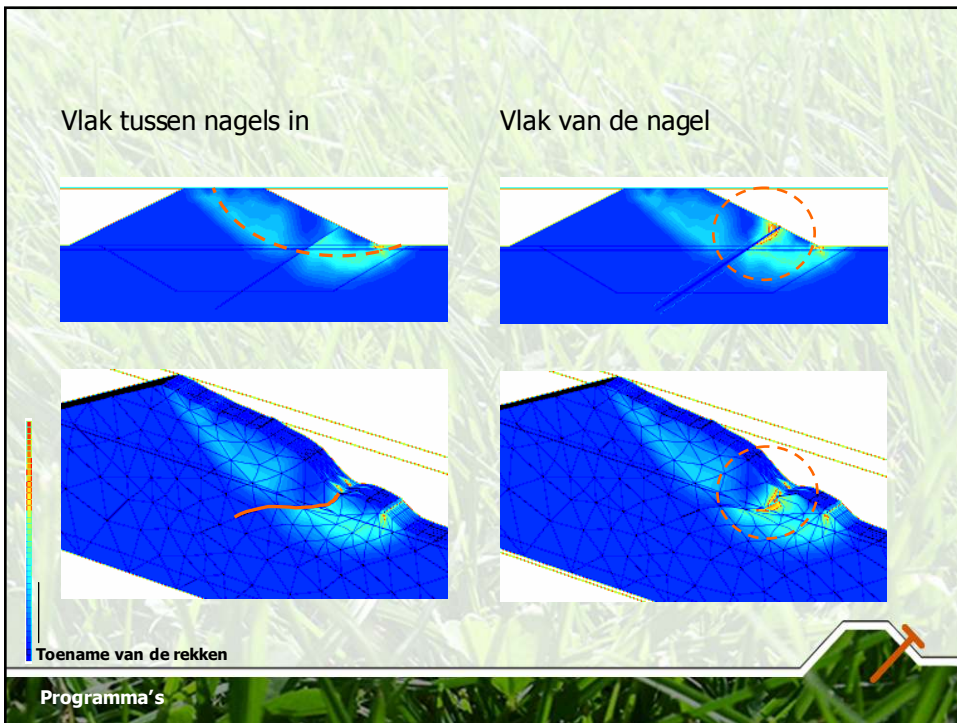
- Afschuiven deel tussen de nagels door
- Nagels 'snijden' door de grond



Programma's

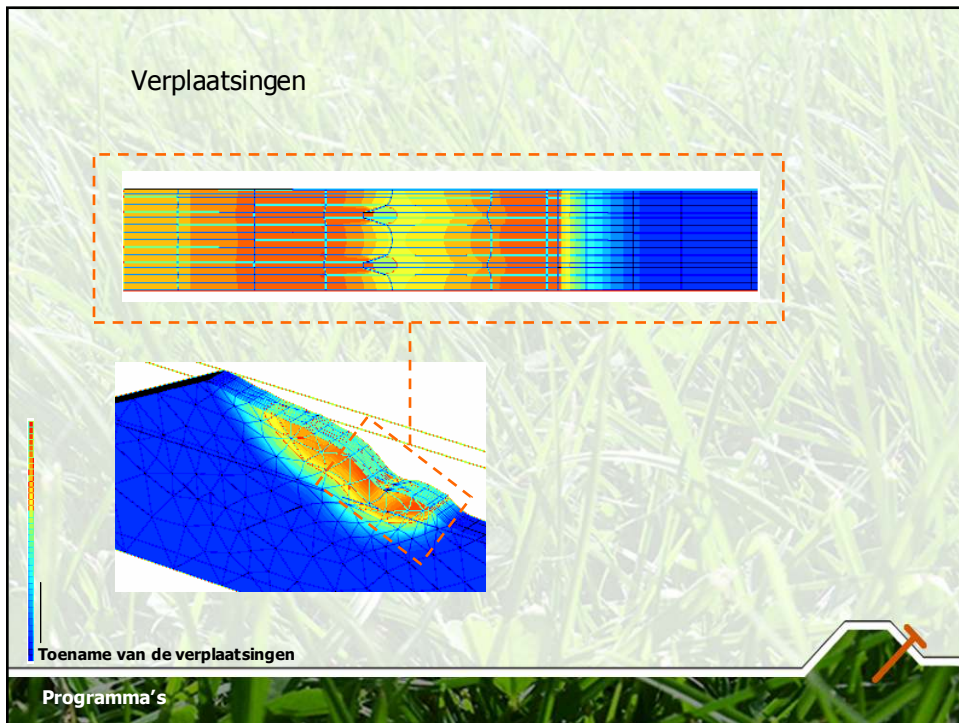
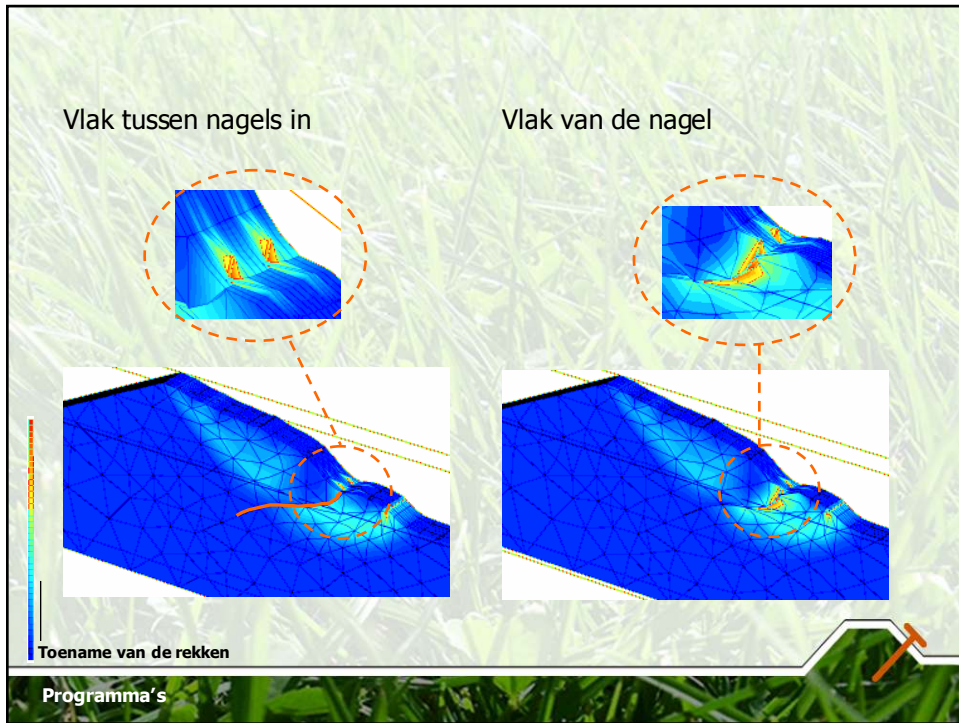


Programma's

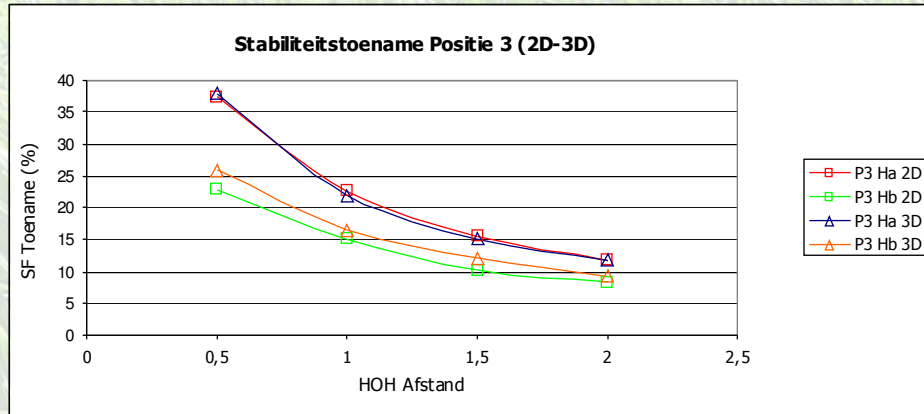
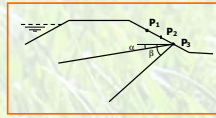


Toename van de rekken

Programma's



Stabiliteitstoename 2D-3D

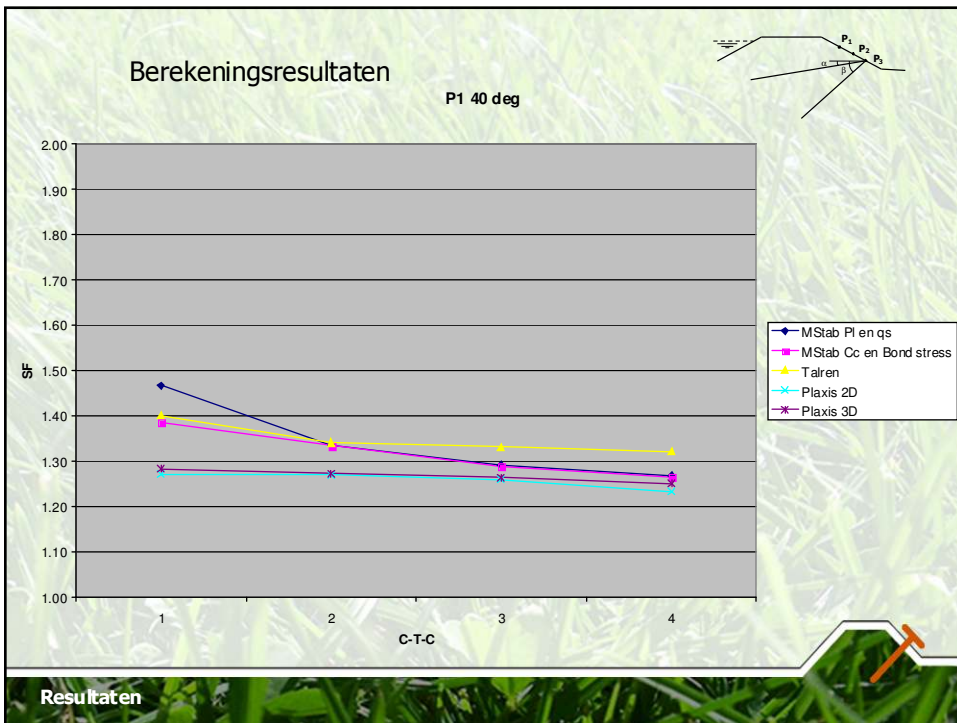
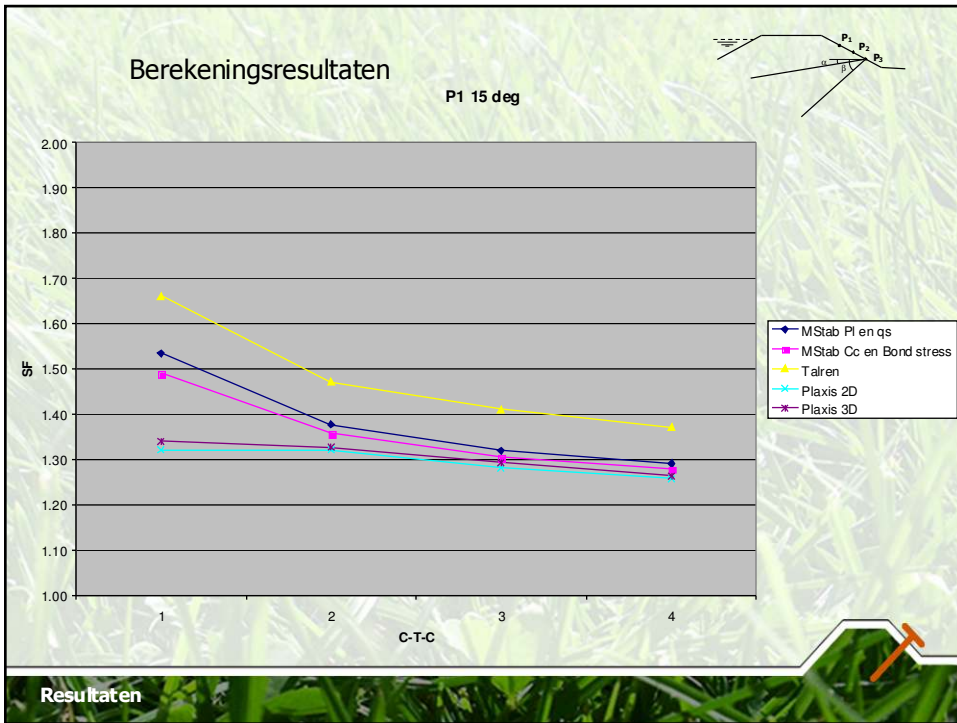


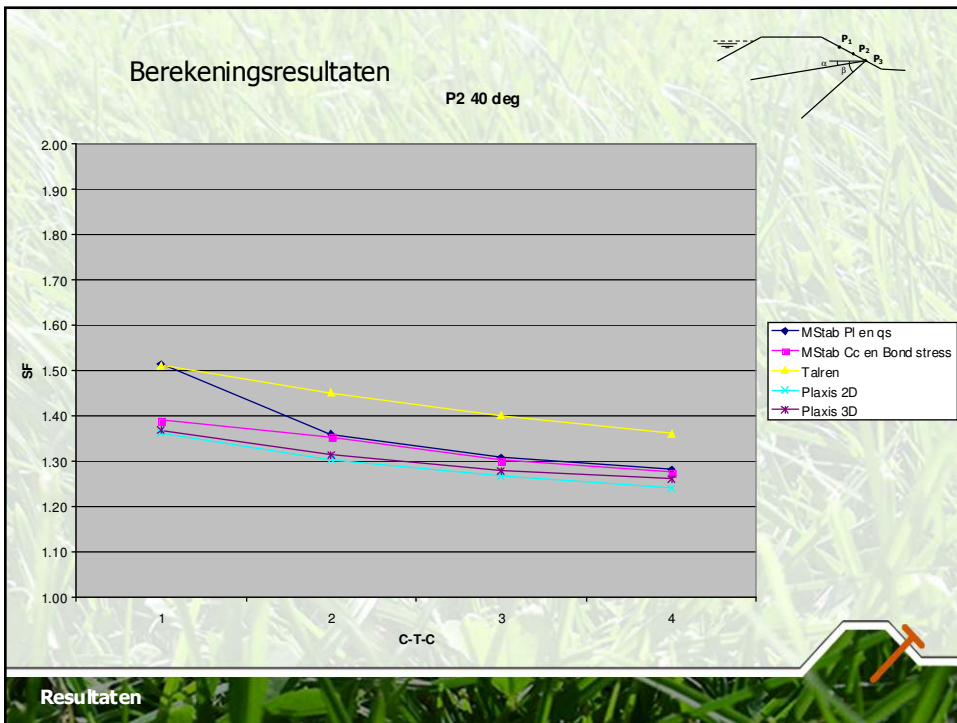
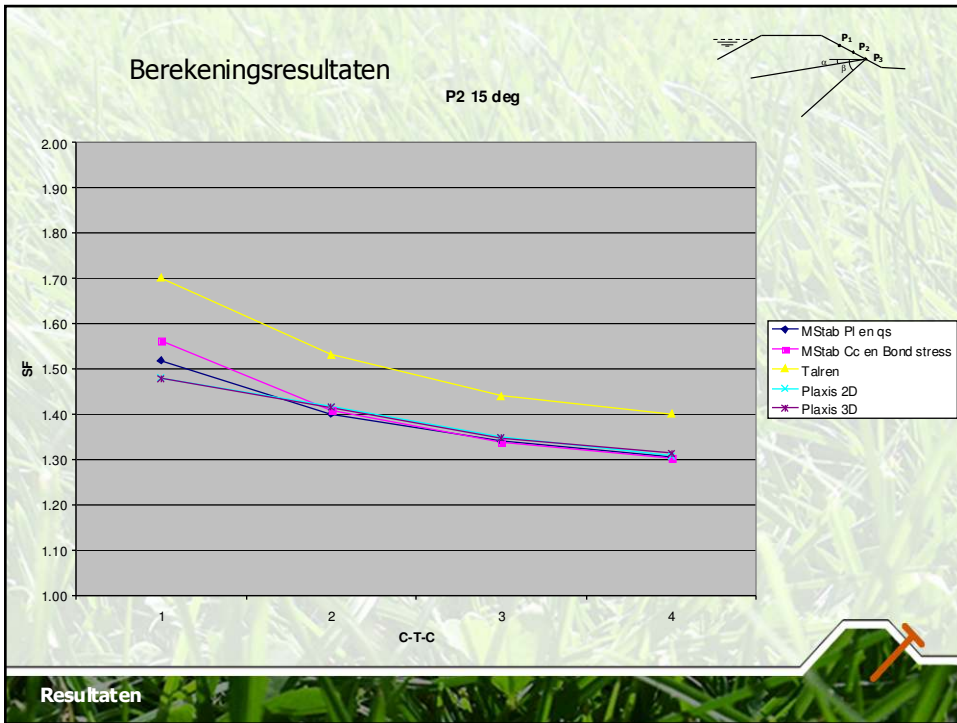
Programma's

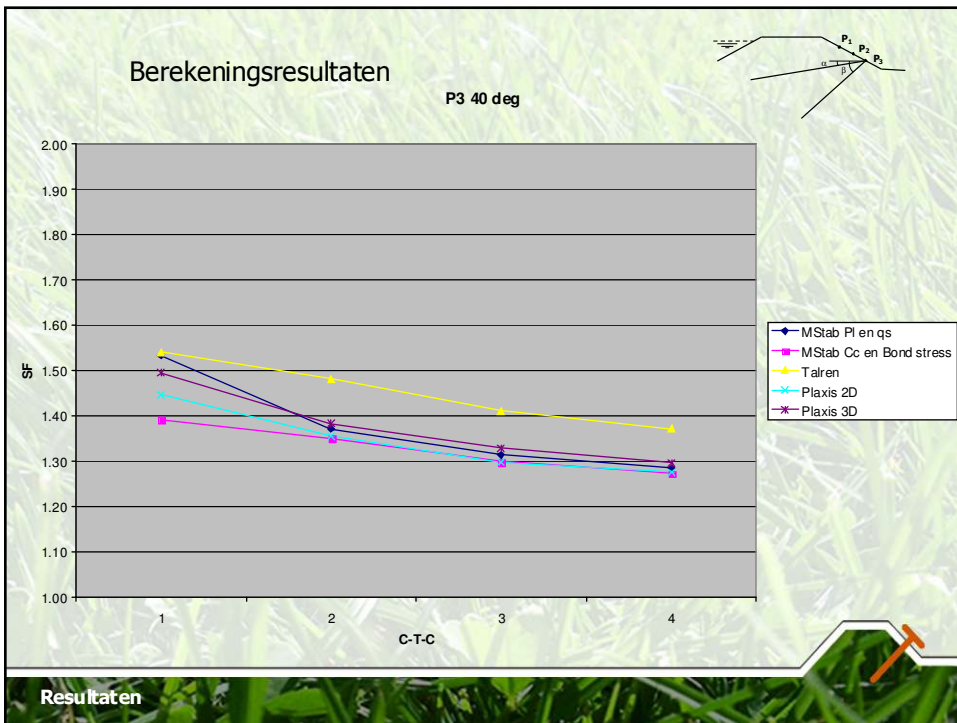
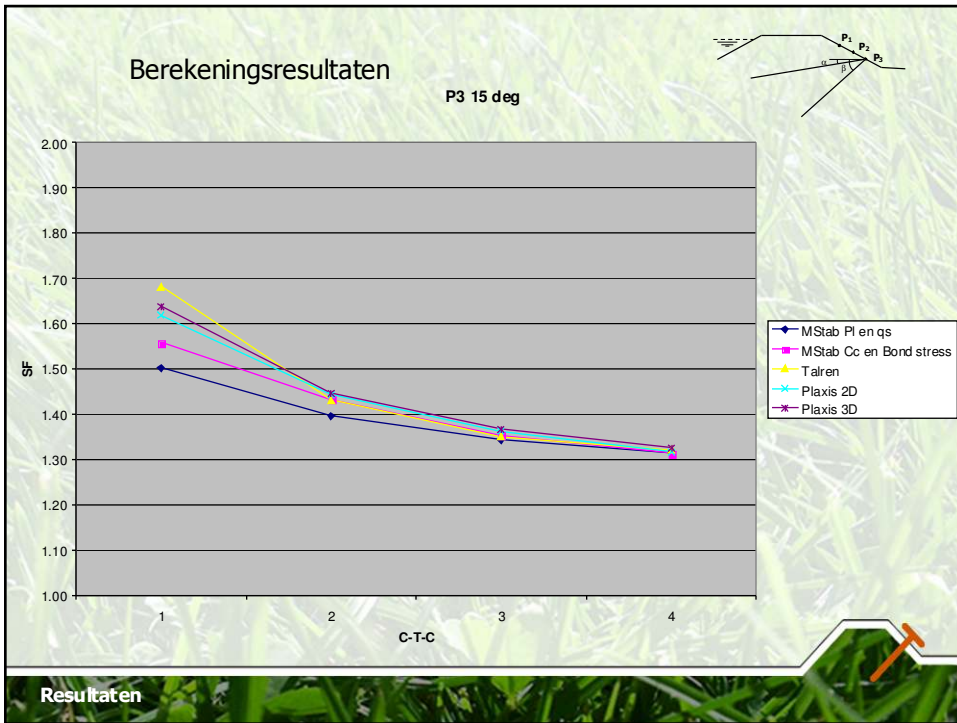
Berekeningsresultaten

	Mstab 9.10 SF netto	Mstab Cc SF netto	Talren 97 SF netto	Plaxis 2D SF netto	Plaxis 3D SF netto
000	1.19	1.19	1.27	1.18	1.19
111	1.53	1.49	1.66	1.32	1.34
112	1.38	1.36	1.47	1.32	1.33
113	1.32	1.30	1.41	1.28	1.29
114	1.29	1.28	1.37	1.26	1.26
121	1.47	1.39	1.40	1.27	1.28
122	1.34	1.33	1.34	1.27	1.27
123	1.29	1.29	1.33	1.26	1.26
124	1.27	1.26	1.32	1.23	1.25
211	1.52	1.56	1.70	1.48	1.48
212	1.40	1.41	1.53	1.42	1.41
213	1.34	1.34	1.44	1.35	1.35
214	1.31	1.30	1.40	1.31	1.31
221	1.51	1.39	1.51	1.36	1.37
222	1.36	1.35	1.45	1.30	1.31
223	1.31	1.30	1.40	1.27	1.28
224	1.28	1.27	1.36	1.24	1.26
311	1.50	1.56	1.68	1.62	1.64
312	1.40	1.43	1.43	1.44	1.45
313	1.34	1.35	1.35	1.36	1.37
314	1.32	1.31	1.32	1.32	1.33
321	1.53	1.39	1.54	1.45	1.49
322	1.37	1.35	1.48	1.35	1.38
323	1.31	1.30	1.41	1.30	1.33
324	1.28	1.27	1.37	1.28	1.30

Resultaten







Toekomst

Verschillen gedetailleerd analyseren

Validatie berekeningen met Plaxis 3D Foundations

(Embedded piles, zodra deze redelijk werkt)

Toekomst