

Utilisation de Taspie+ et Piecoef+ pour les projets d'inclusions rigides selon Recommandations ASIRI

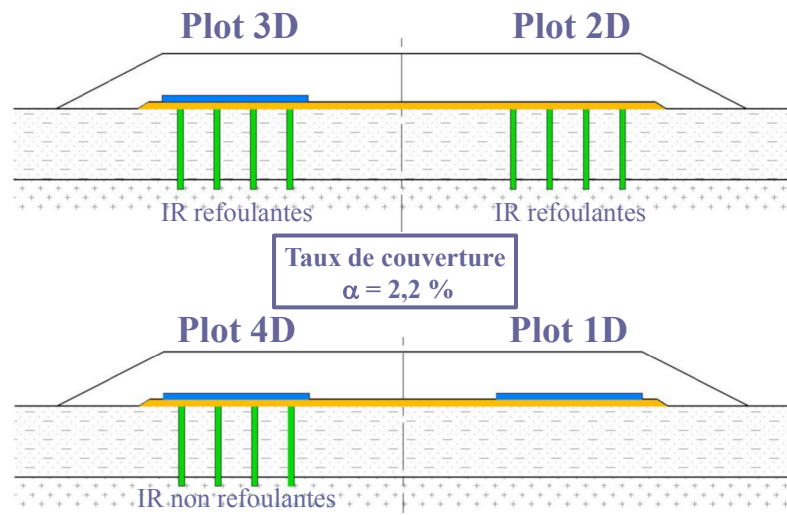
Bruno SIMON

Foxta Y3 (19/10/2011)

- **Cellule élémentaire d'un réseau**
 - Ouvrages expérimentaux (dallage, remblai)
- **Semelle sur inclusions rigides**
 - Chargement vertical
 - Chargement latéral

Foxta Y3 (19/10/2011)

Expérimentation St Ouen (2006)

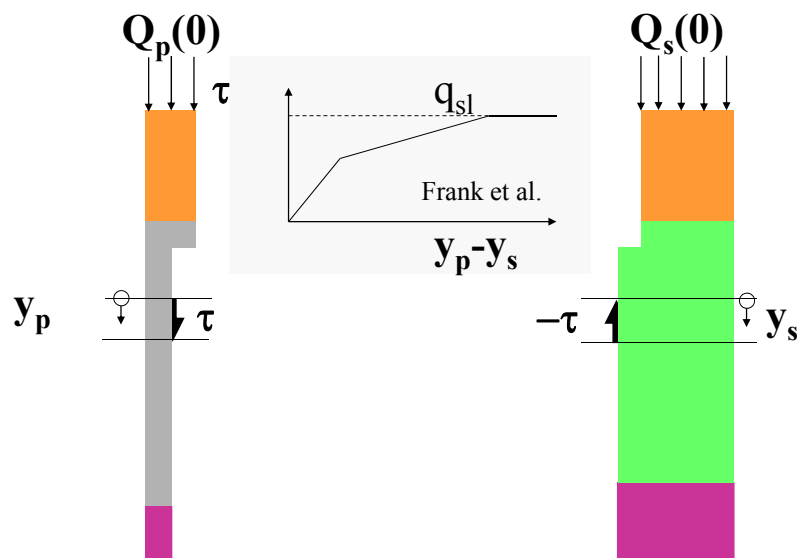


Foxta V3 (19/10/2011)



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Modèle cellule élémentaire (Taspie+)

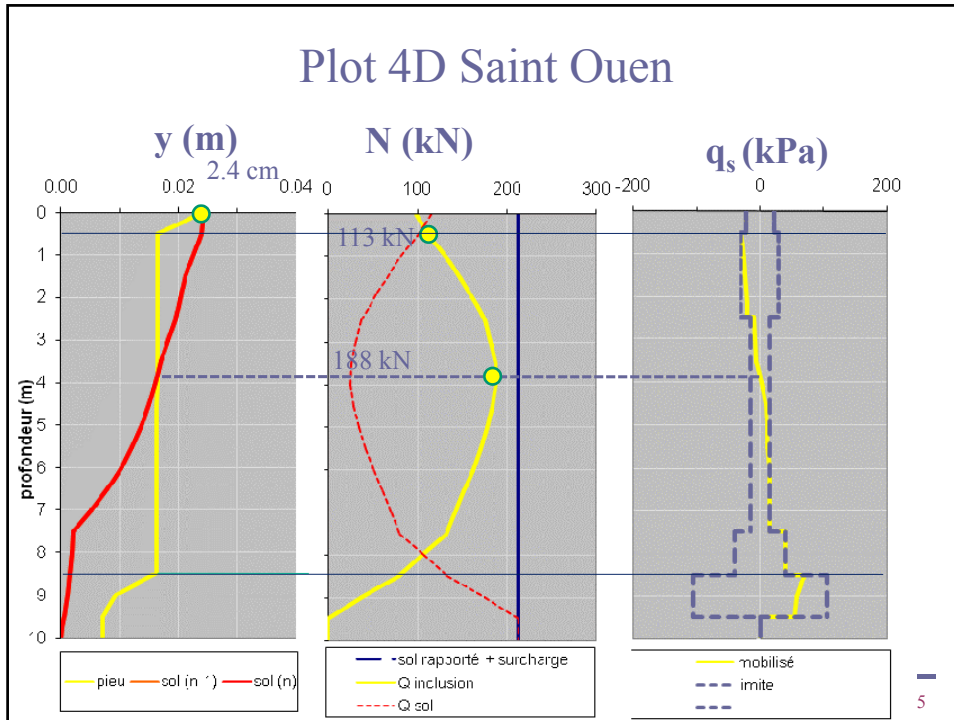


Foxta V3 (19/10/2011)

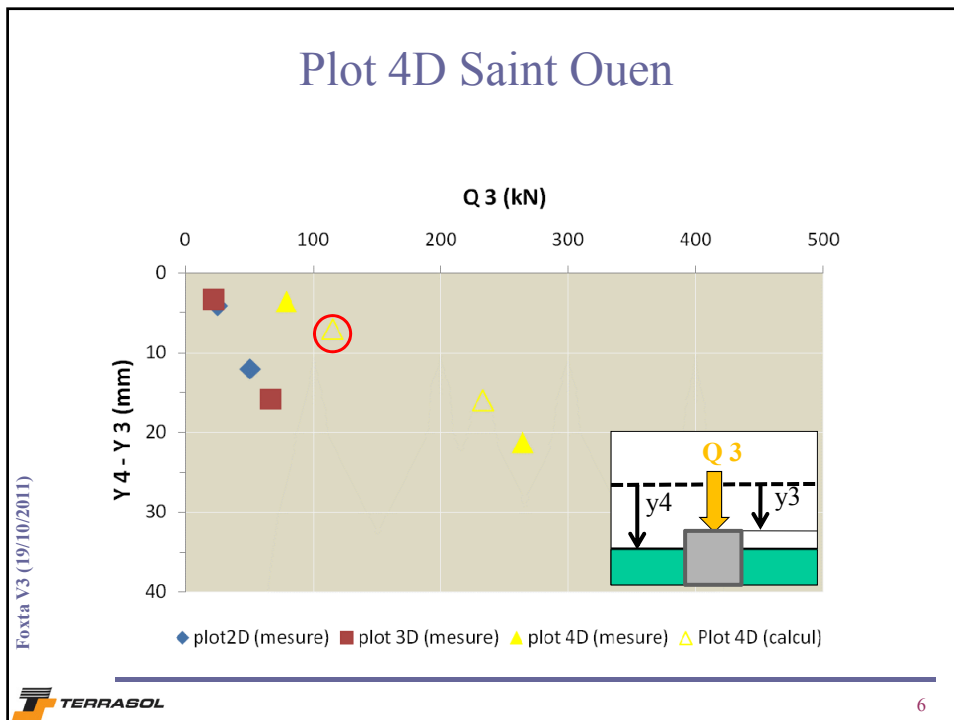


4

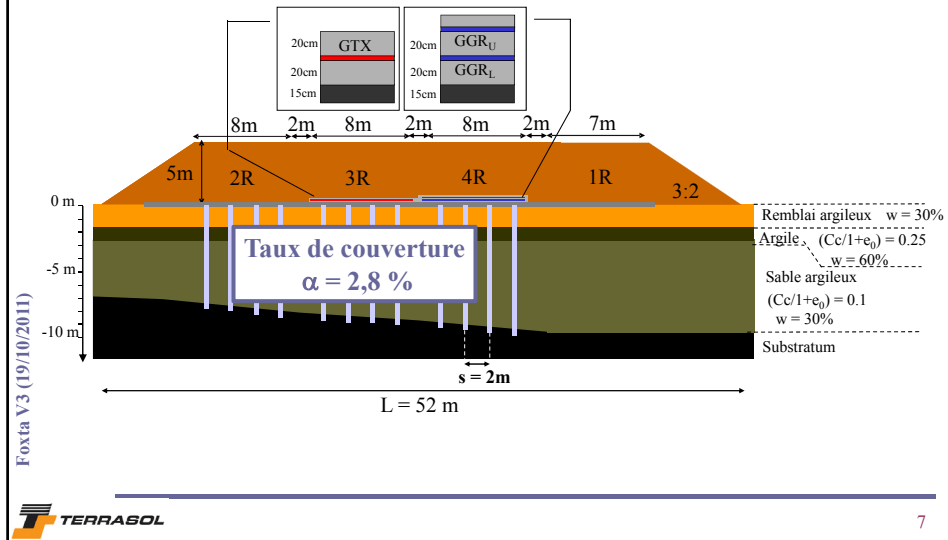
Plot 4D Saint Ouen



Plot 4D Saint Ouen

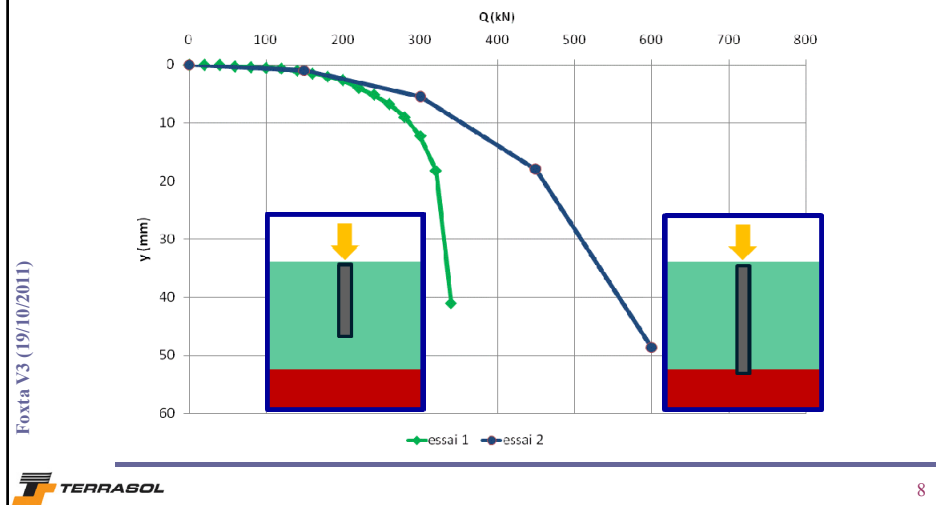


Expérimentation Chelles (2007)



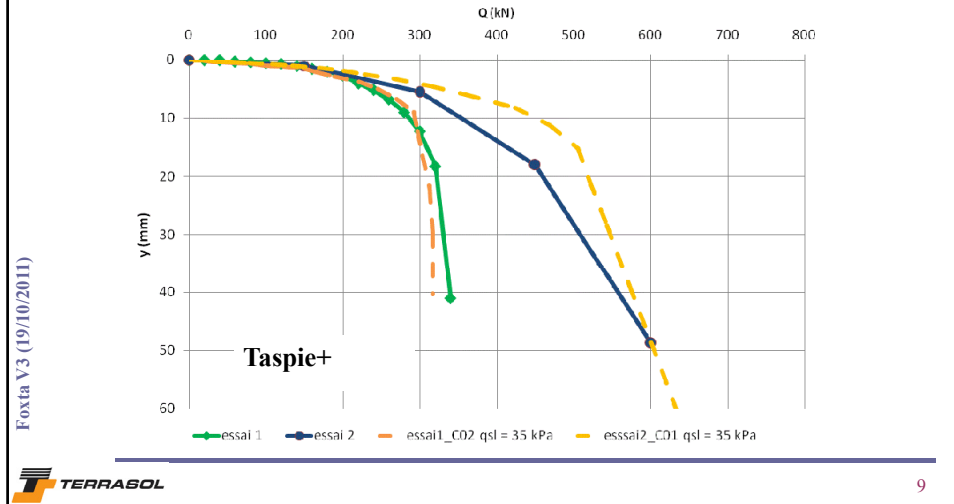
Benchmark Chelles (2009)

• Calage sur chargement inclusions isolées



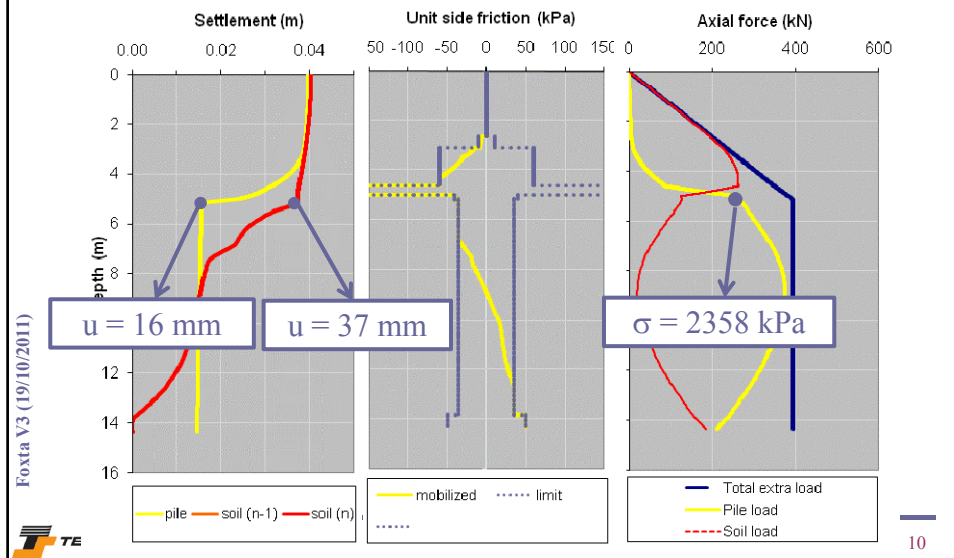
Benchmark Chelles (2009)

• Calage sur chargement inclusions isolées



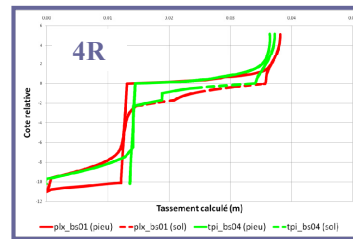
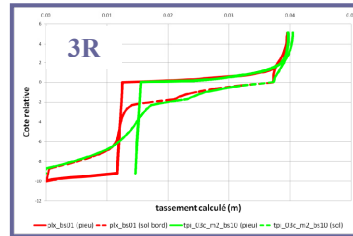
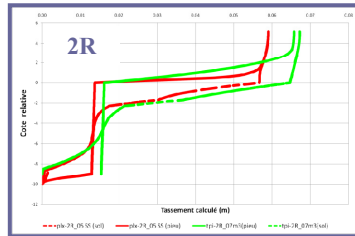
Benchmark Chelles (2009)

• Plot 3R



Benchmark Chelles (2009)

• Plots 2R – 3R – 4R



Taspie+
Plaxis

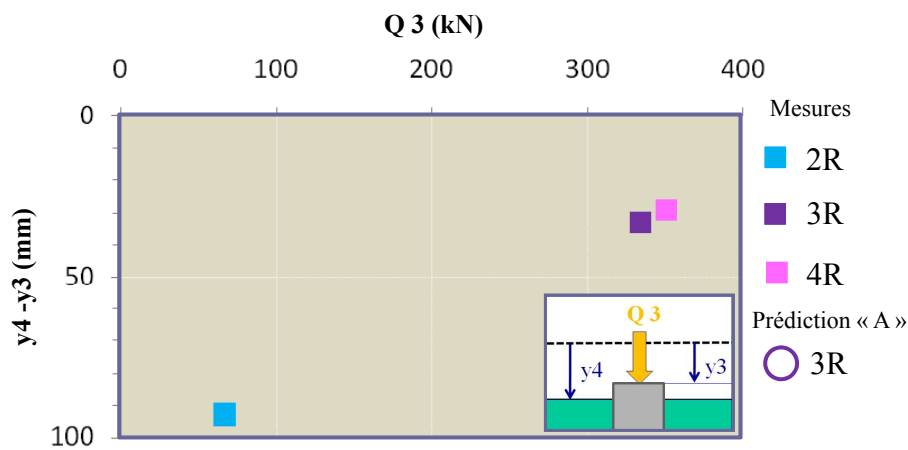
Foxta V3 (19/10/2011)



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Benchmark Chelles (2009)

• Plot 3R



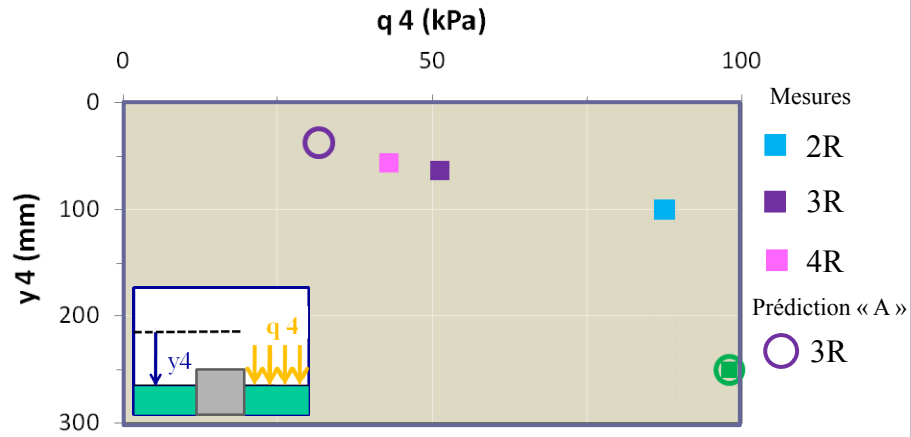
Foxta V3 (19/10/2011)



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Benchmark Chelles (2009)

• Plot 3R



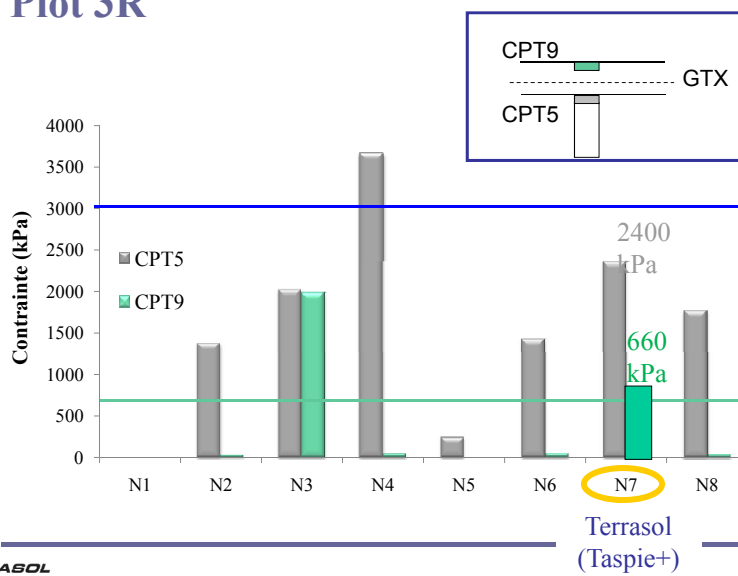
Foxta V3 (19/10/2011)



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Benchmark Chelles (2009)

• Plot 3R

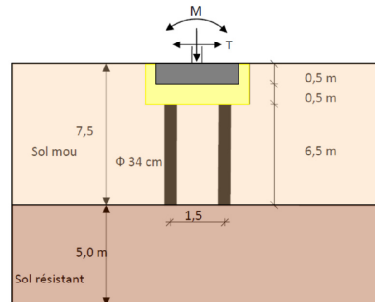
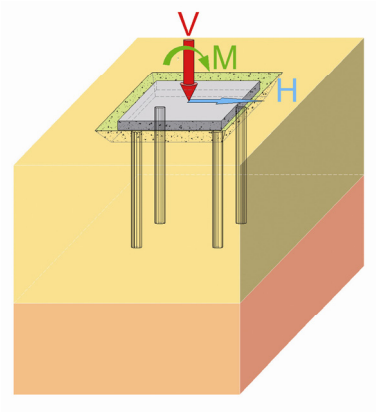


Foxta V3 (19/10/2011)



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Semelle sur inclusions rigides

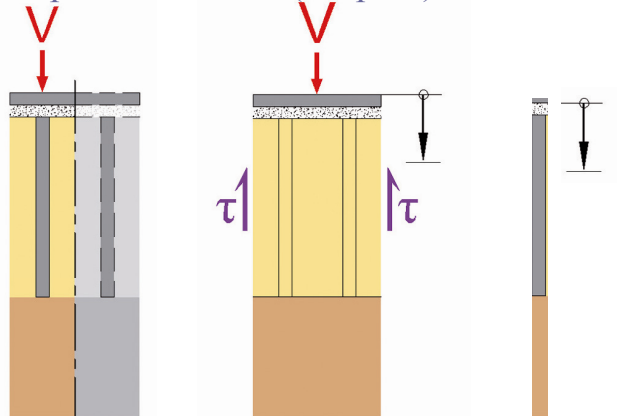


Foxta V3 (19/10/2011)

Semelle sur inclusions rigides

• Chargement vertical

– 3 étapes successives (Taspie+)



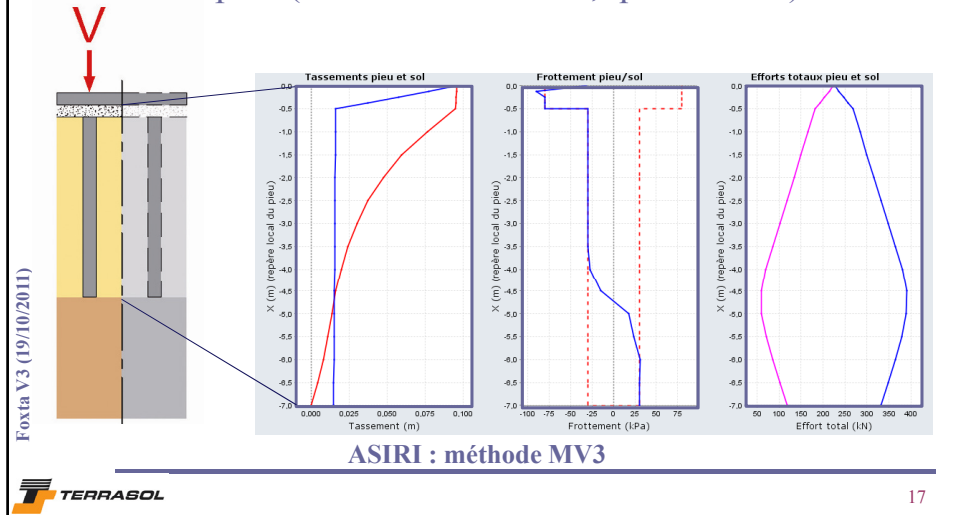
ASIRI : méthode MV3

Foxta V3 (19/10/2011)

Semelle sur inclusions rigides

- **Chargement vertical**

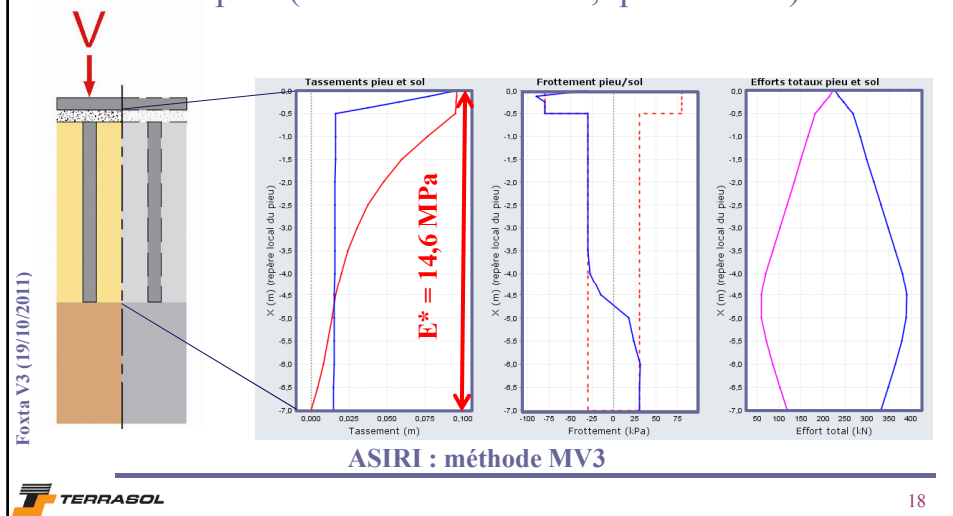
– Etape 1 (cellule 1.5 x 1.5 m², q = 200 kPa)



Semelle sur inclusions rigides

- **Chargement vertical**

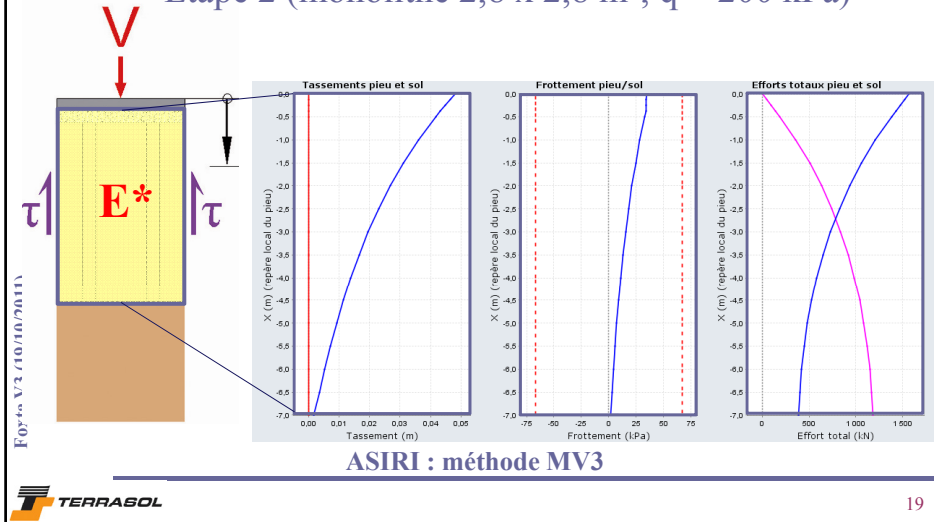
– Etape 1 (cellule 1.5 x 1.5 m², q = 200 kPa)



Semelle sur inclusions rigides

- **Chargement vertical**

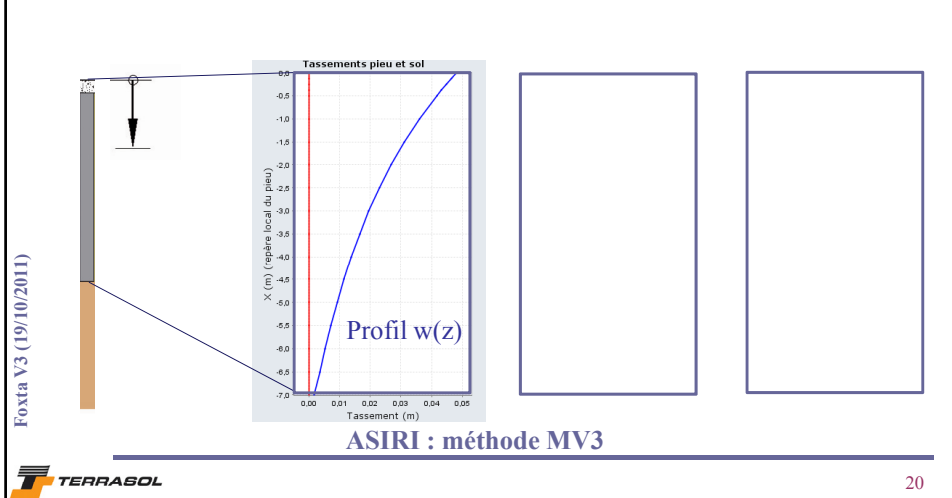
– Etape 2 (monolithe 2,8 x 2,8 m², q = 200 kPa)



Semelle sur inclusions rigides

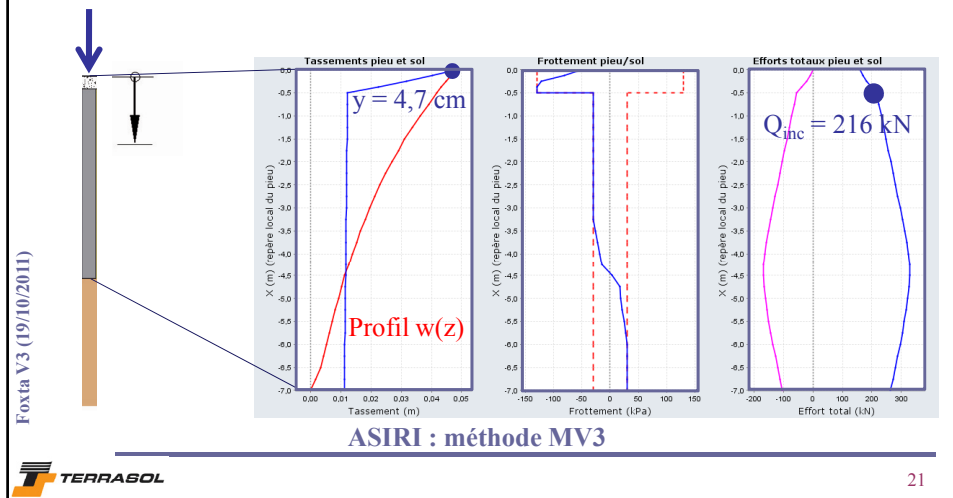
- **Chargement vertical**

– Etape 3 (inclusion +prisme matelas)

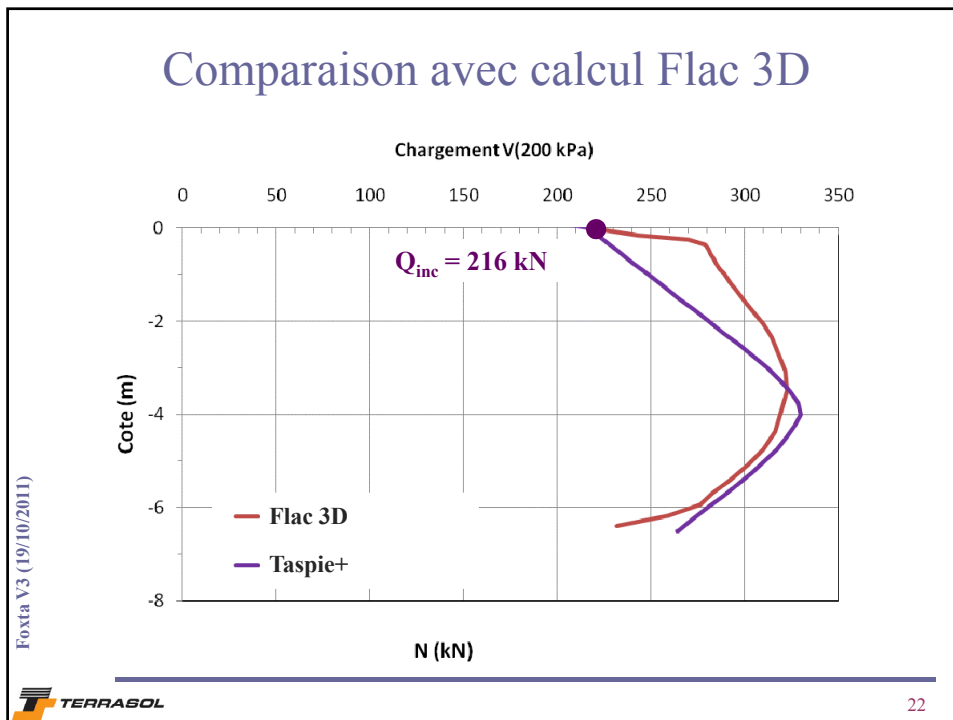


Semelle sur inclusions rigides

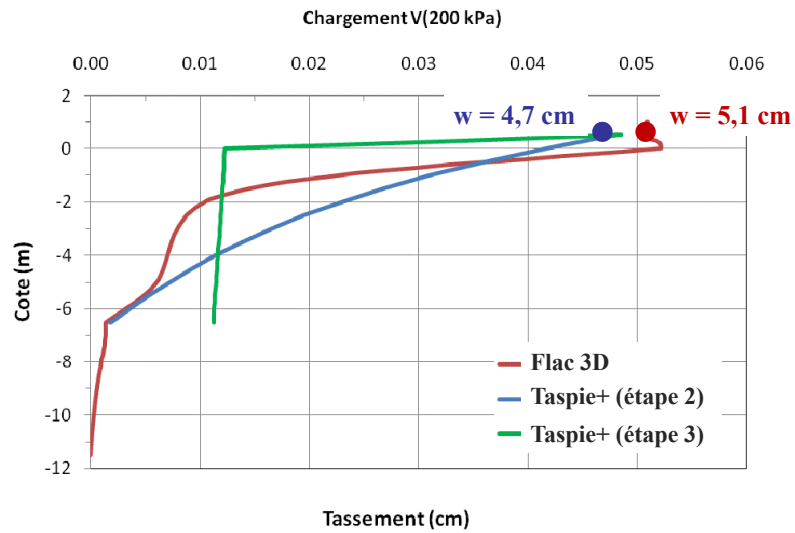
- **Chargement vertical**
 - Etape 3 (inclusion +prisme matelas)



Comparaison avec calcul Flac 3D



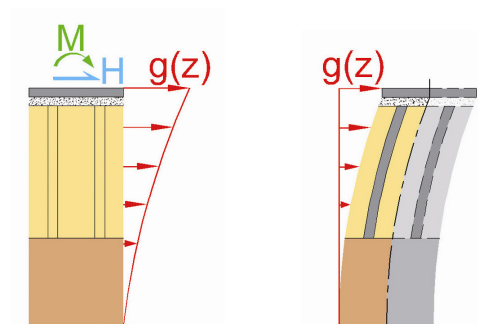
Comparaison avec calcul Flac 3D



Foxta V3 (19/10/2011)

Semelle sur inclusions rigides

- **Chargement transversal**
 - 2 étapes successives (Piecoef+)



ASIRI : méthode MH3

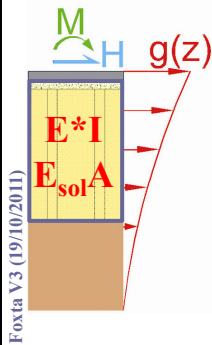
Foxta V3 (19/10/2011)

Semelle sur inclusions rigides

• Chargement transversal

– Etape 4 (monolithe 2.8 x 2.8 m²)

- compression verticale $E^* = 14.6 \text{ MPa}$ → E^*I
- cisaillement $E_{\text{sol}} = 1.8 \text{ MPa}$ → $E_{\text{sol}}A$



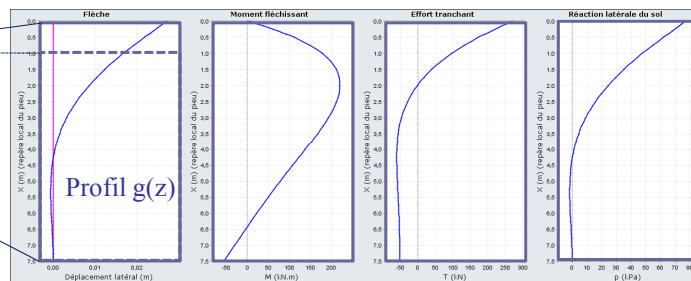
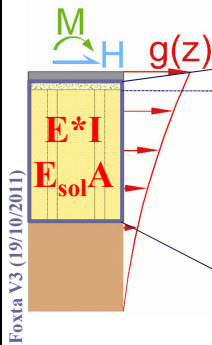
ASIRI : méthode MH3

Semelle sur inclusions rigides

• Chargement transversal

– Etape 4 (monolithe 2.8 x 2.8 m²)

- compression verticale $E^* = 14.6 \text{ MPa}$ → E^*I
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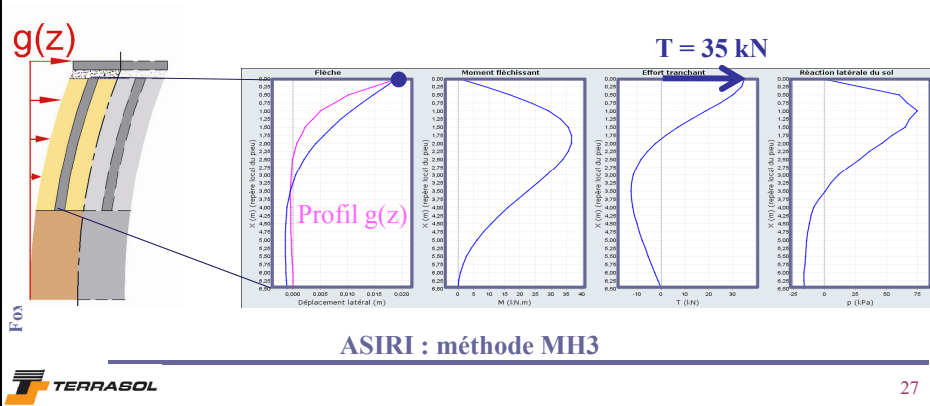


ASIRI : méthode MH3

Semelle sur inclusions rigides

- **Chargement transversal**

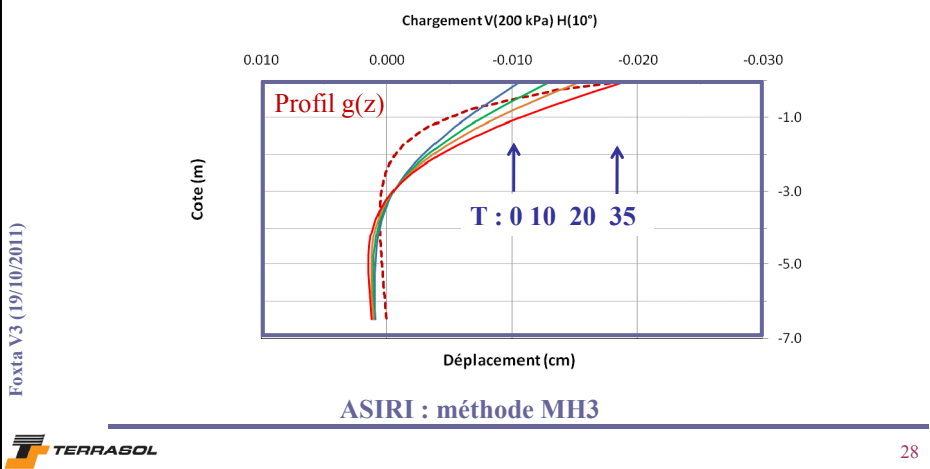
– Etape 5 (inclusion ϕ 34 cm, E = 20000 MPa)



Semelle sur inclusions rigides

- **Chargement transversal**

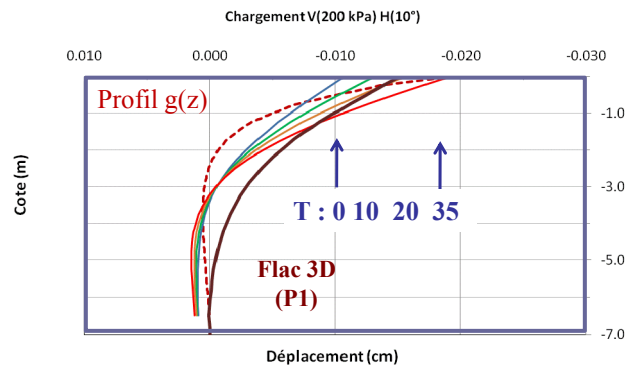
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Semelle sur inclusions rigides

- **Chargement transversal**

– Etape 5 (inclusion ϕ 34 cm, $E = 20000$ MPa)



ASIRI : méthode MH3

Foxta V3 (19/10/2011)

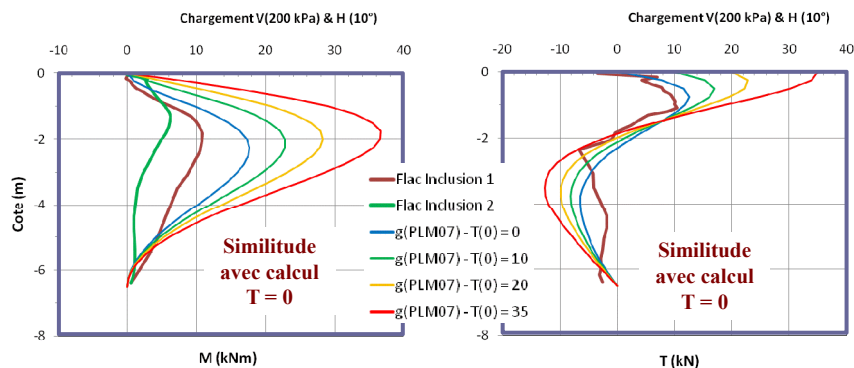


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Semelle sur inclusions rigides

- **Chargement transversal**

– Etape 5 (inclusion ϕ 34 cm, $E = 20000$ MPa)



ASIRI : méthode MH3

Foxta V3 (19/10/2011)



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Conclusions

- **Outils bien adaptés au projet des inclusions rigides**
 - Cellule élémentaire sous chargement vertical (Taspie+)
 - Validation sur résultats plots expérimentaux ASIRI
 - Semelle sur inclusions rigides
 - Chargement vertical (Taspie+)
 - Chargement V, H, M (Taspie+ & Piecoef+)
 - Validation sur calculs Flac 3D ASIRI

MERCI