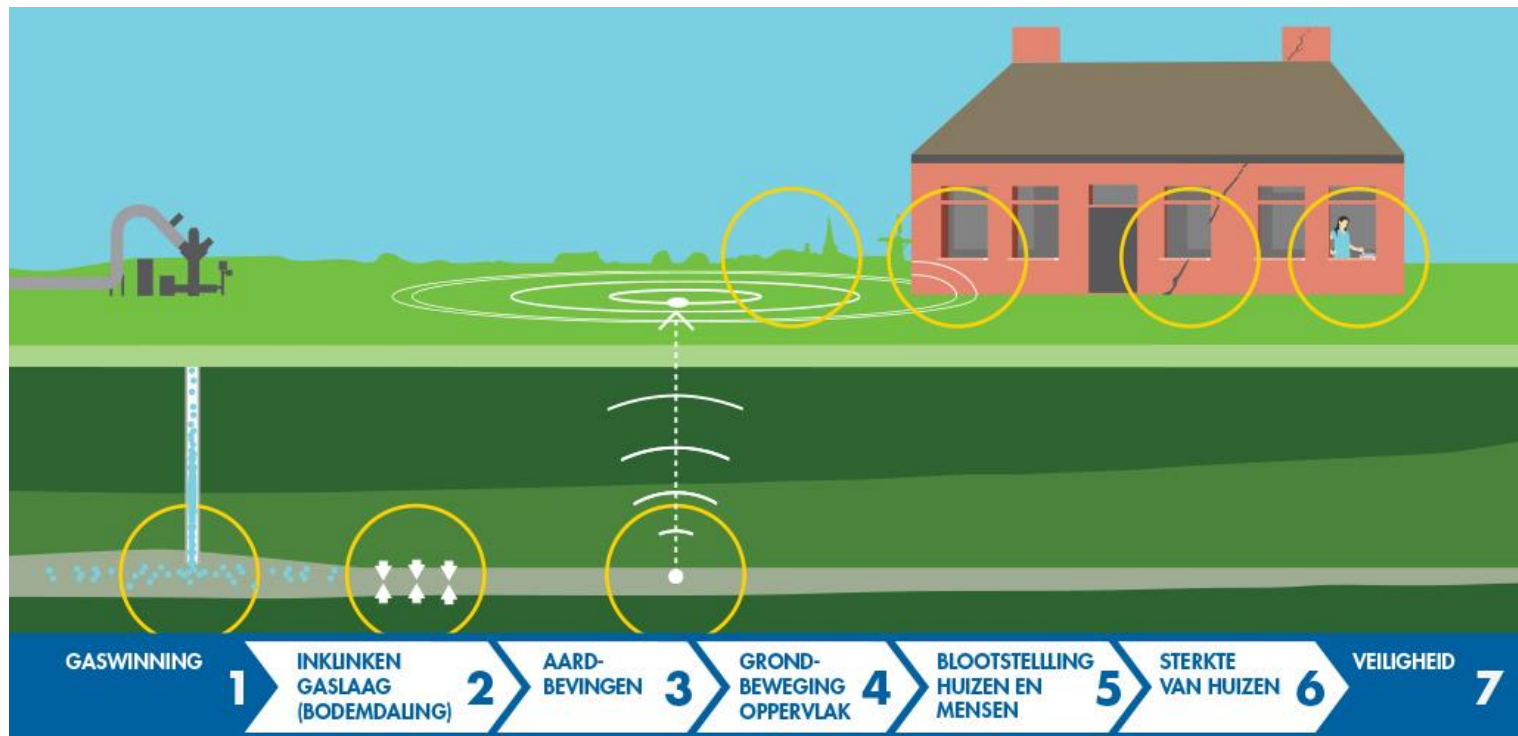


The background image shows a laboratory setting with several wooden molds arranged on a wooden pallet. Each mold contains a grid of small, rectangular concrete samples. Some of the molds have handwritten labels, such as 'TUD BEA-5-2' and '1976'. The samples appear to be undergoing a curing or testing process. The overall scene is a workshop or lab environment for structural research.

ONDERZOEK NAAR NIEUWE MODELLEN VOOR MODELLERING VAN SCHADE IN GEBOUWEN TEN GEVOLGE VAN AARDBEVINGEN

Stutech - Stufib
2 november 2016
Ton van Beek

Aardbevingen in Groningen



In het nieuws

🕒 woensdag, 29. juni 2016 - 19:44

SP wil betere bescherming erfgoed tegen aardbevingen



Home » Binnenland



Foto: Hollandse Hoogte

Twée kleine aardbevingen in Groningen

Vandaag, 07:52

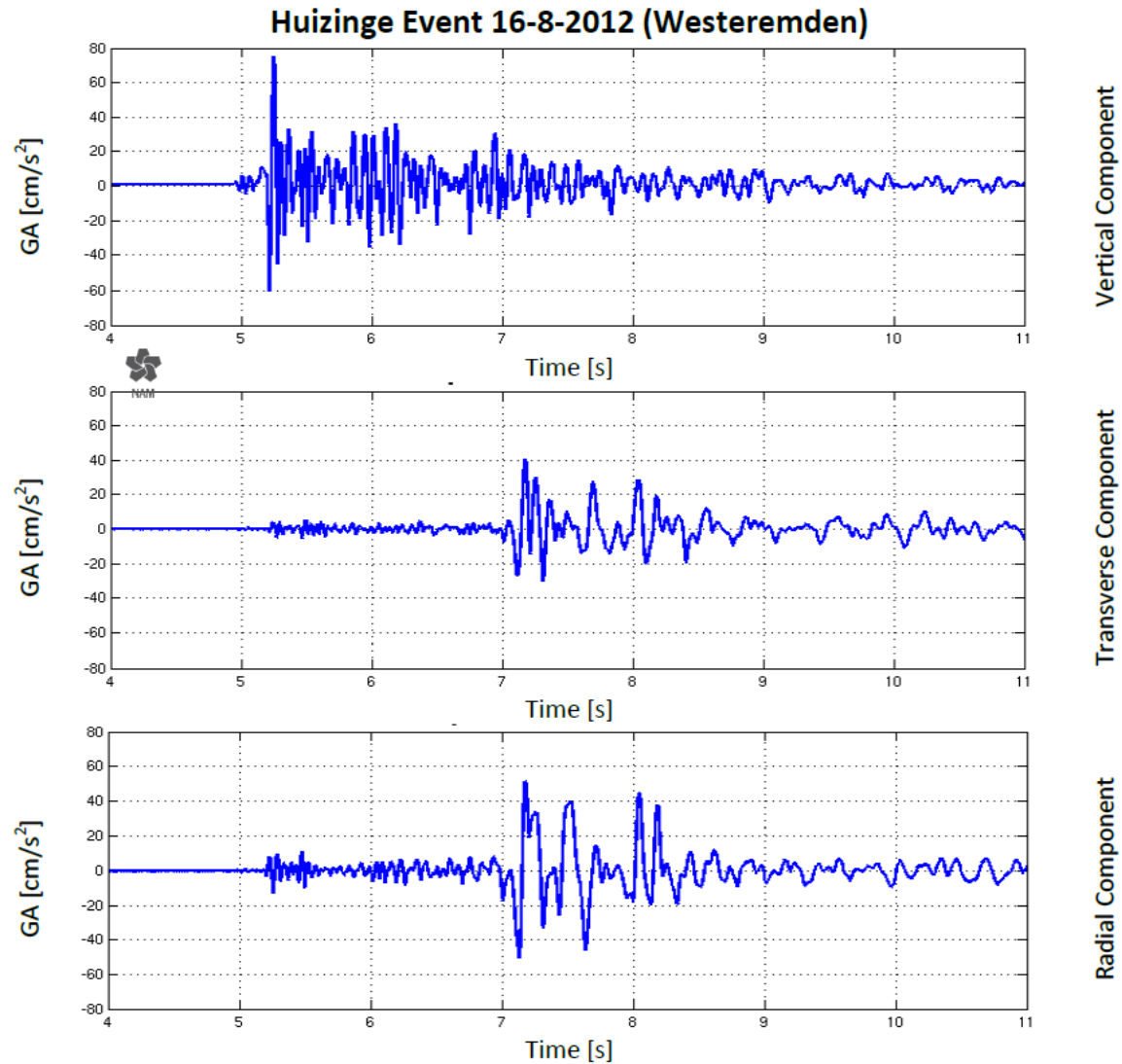


WIRDUM/DE BILT - In de nacht van maandag op dinsdag hebben zich in de bodem van de provincie Groningen twee bevingen voorgedaan. De seismografische dienst van het KNMI heeft om 01.12 uur en om 01.57 uur schokken geregistreerd met een kracht van respectievelijk 1.9 en 2.2.

Inhoud

- Aardbevingen in Groningen
- Modelleren en testen
- Het testprogramma
 - Muren
 - Gebouwen
 - Bestaand metselwerk

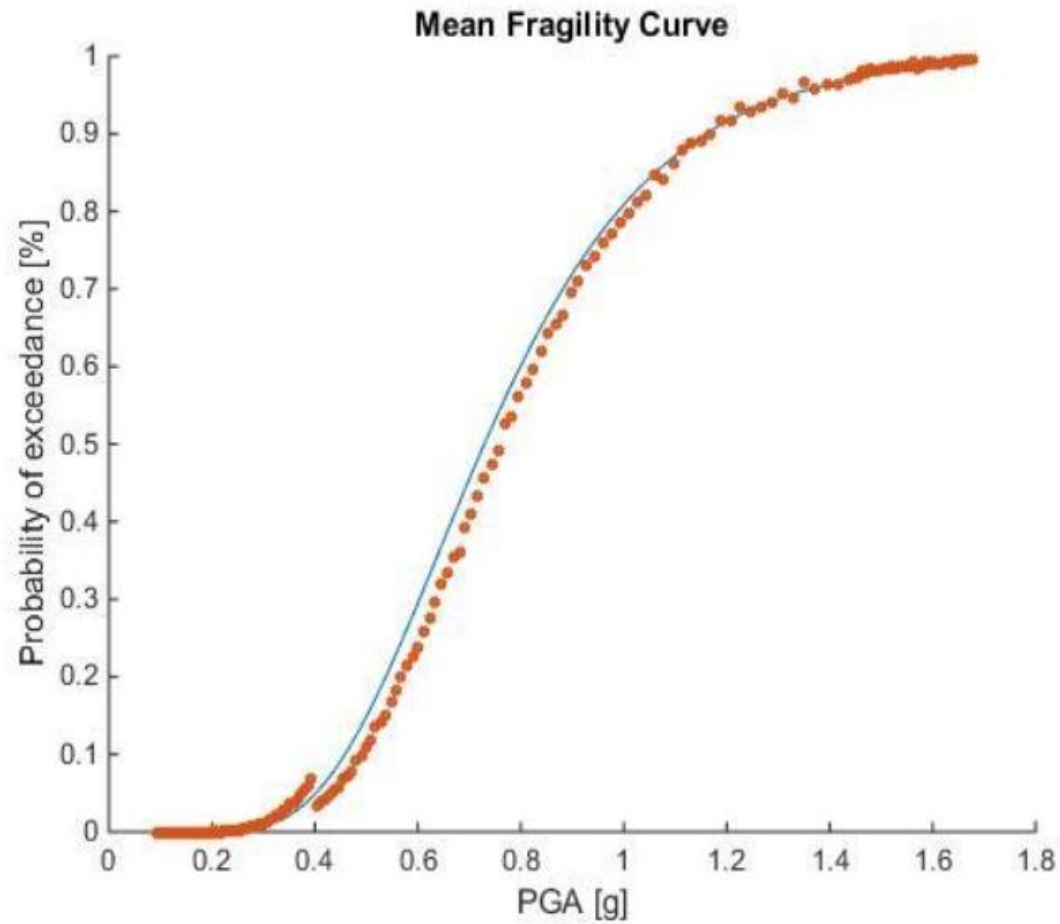
De Groningse aardbeving



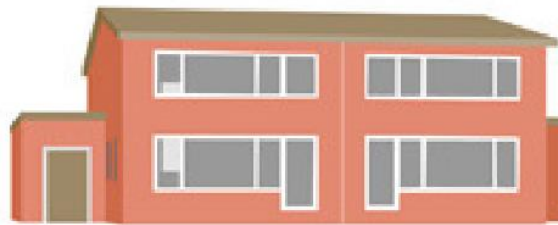
Groningse huizen



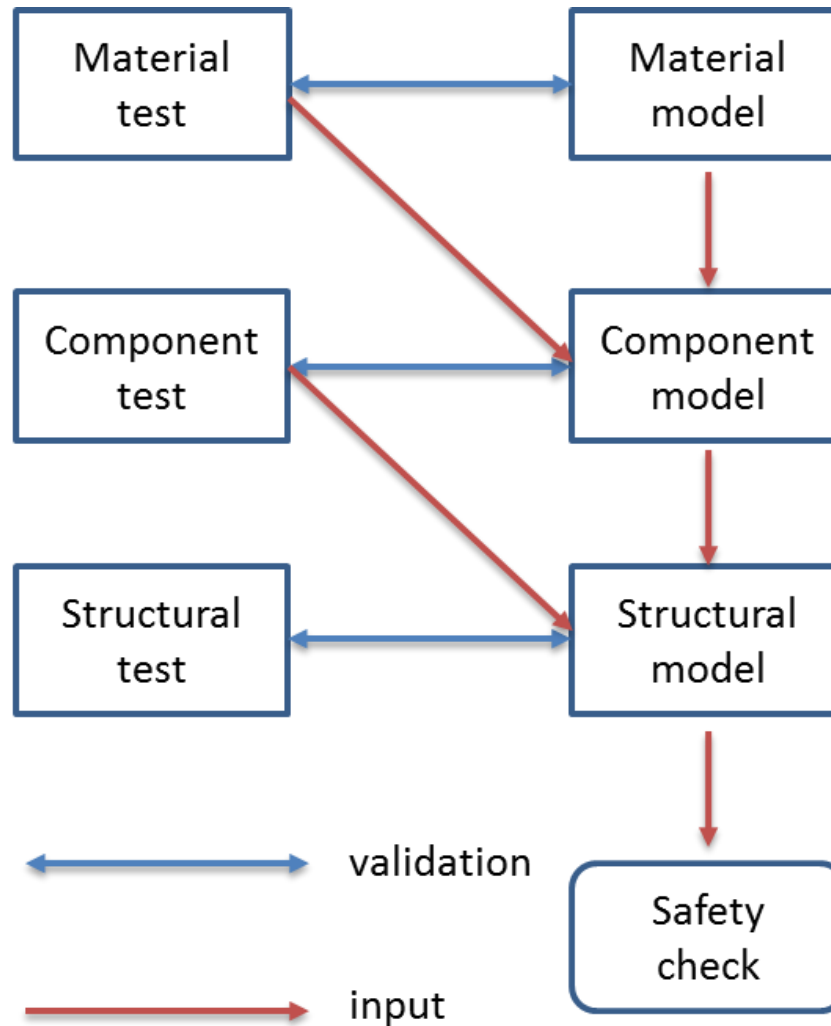
Fragility curve



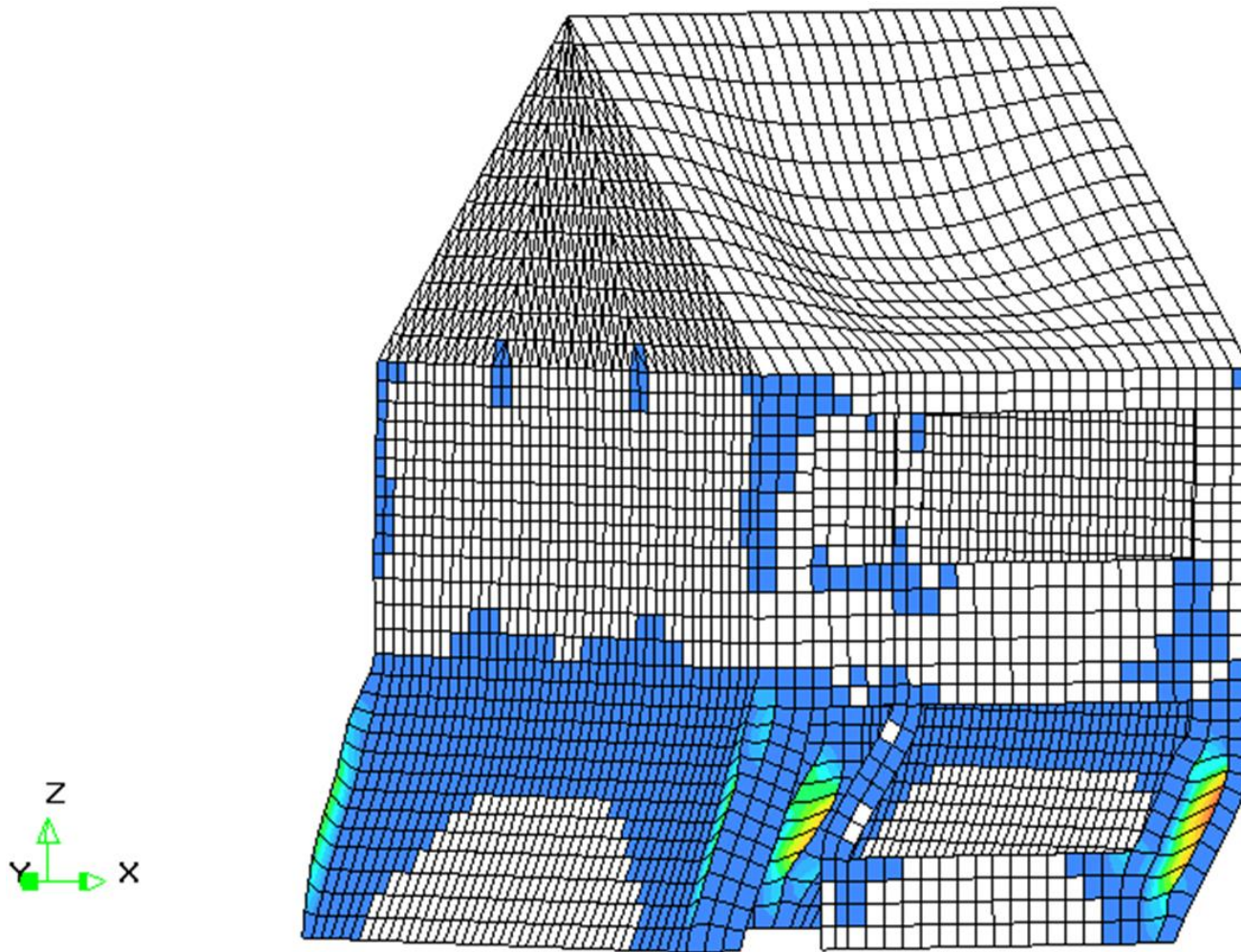
Verschillende typologieën



Werkwijze



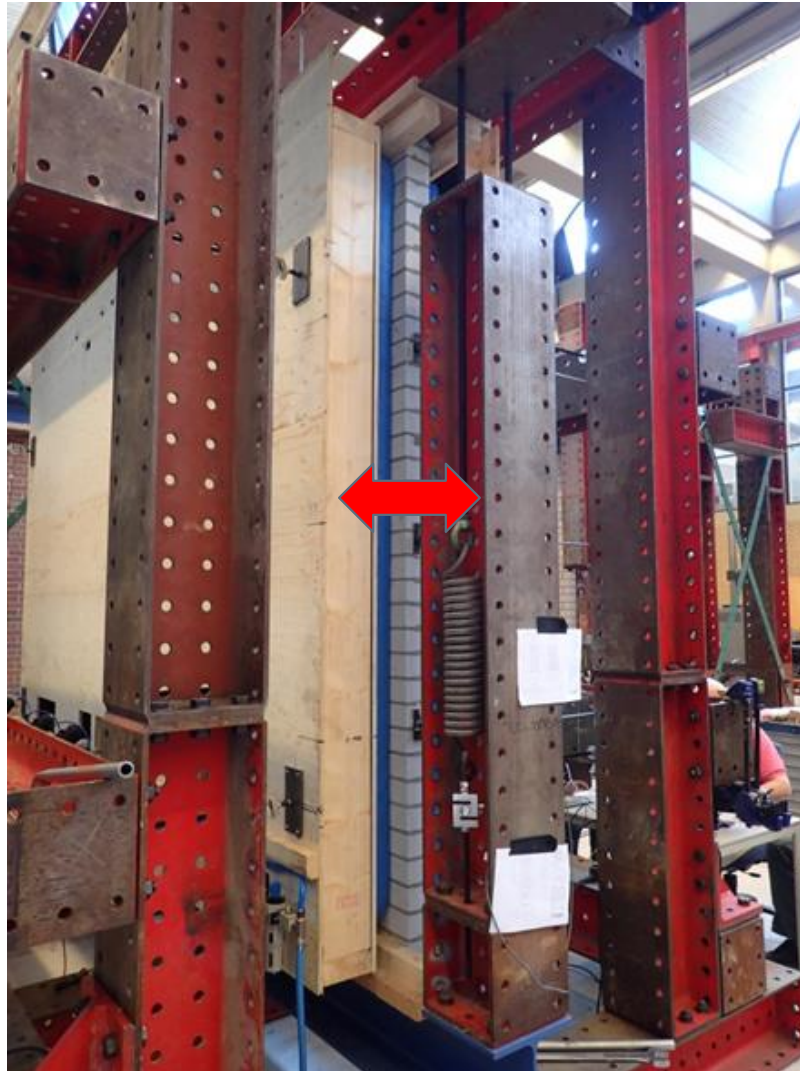
Modelleren



In-plane test of wall



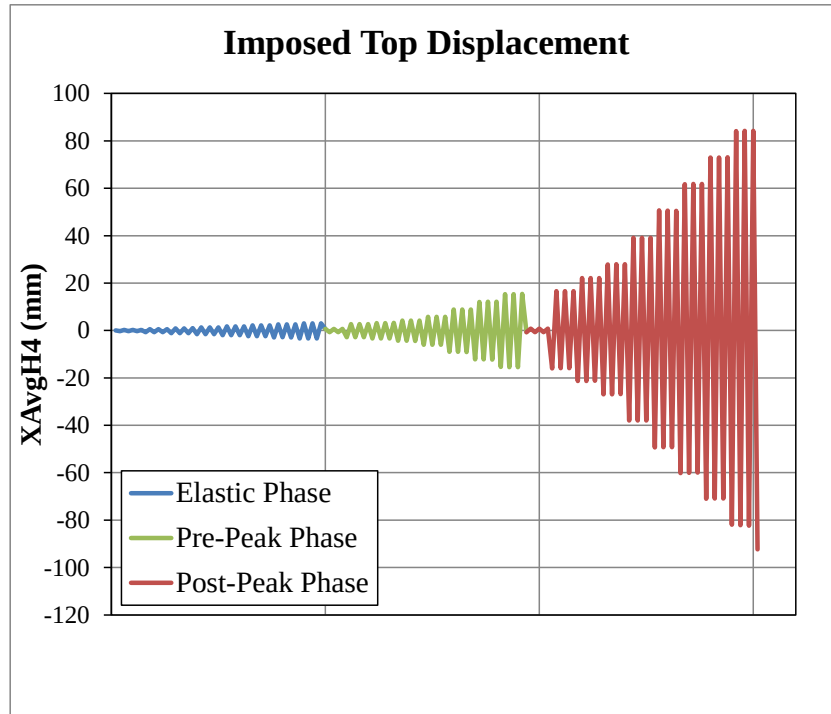
Out-of-plane test



Schud tafel

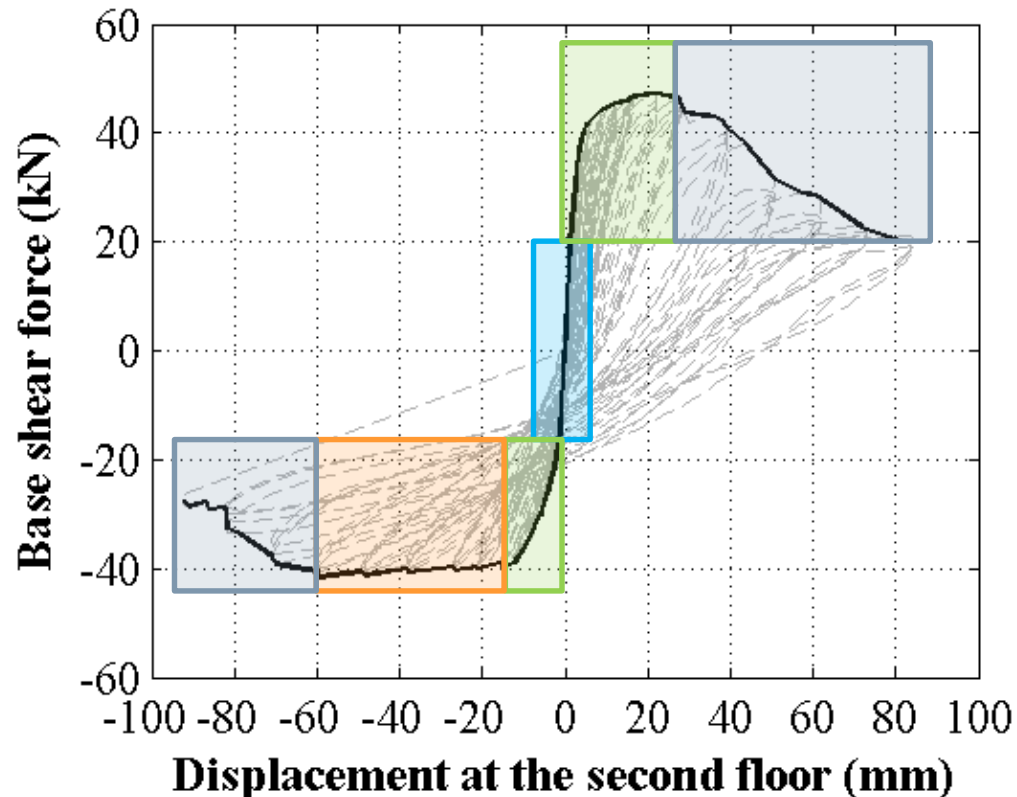


Cyclisch testen





Het resultaat



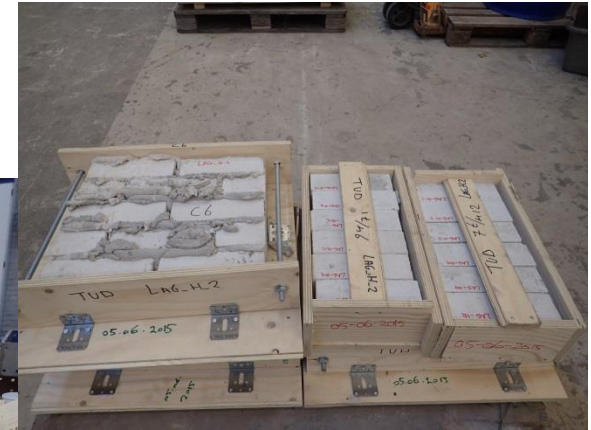
Linear-elastic behaviour up to 1 mm ($F = 20$ kN)

Hardening up to:
Push (+): 1-27 mm
Pull (-): 1-15 mm

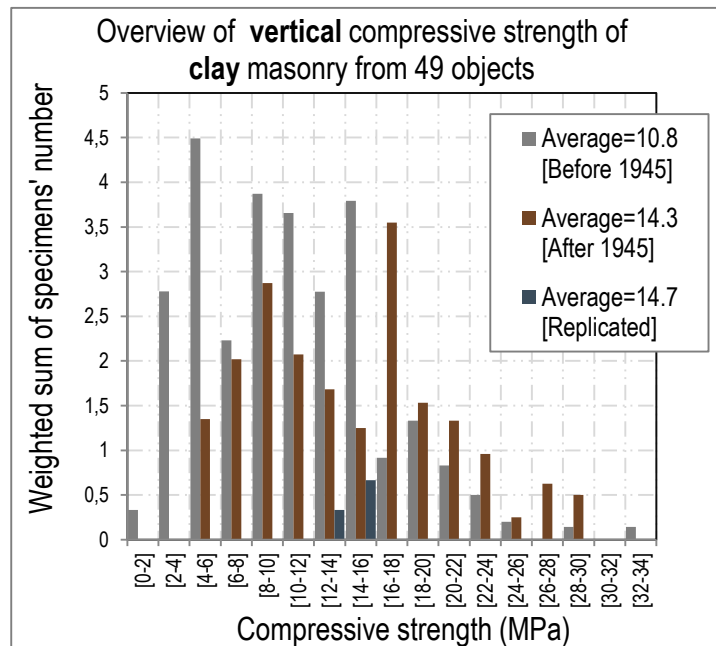
Constant capacity:
Pull (-): 15-60 mm

Degradation in capacity:
Push (+): 27-80 mm
Pull (-): 60-90 mm

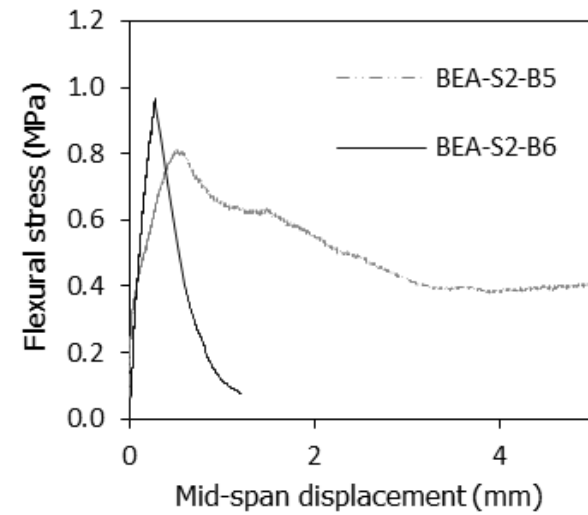
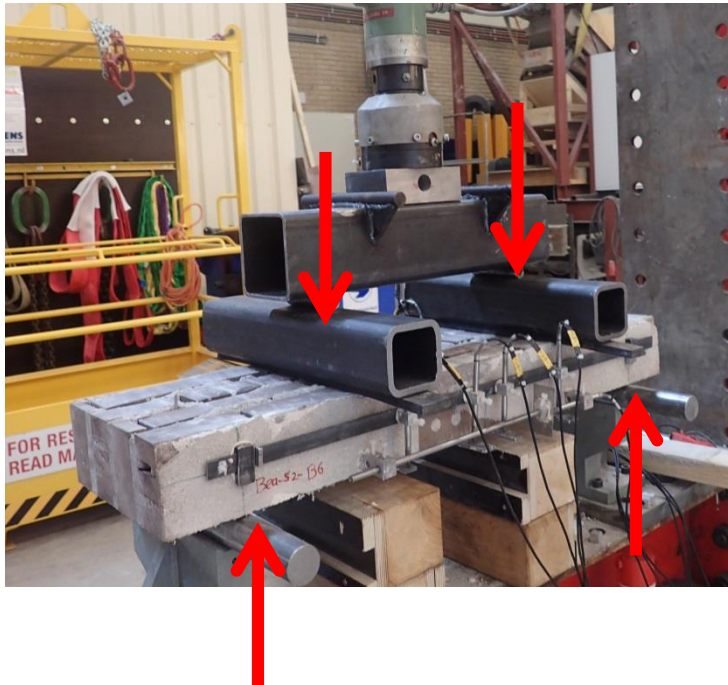
Relatie met bestaande huizen



Druk



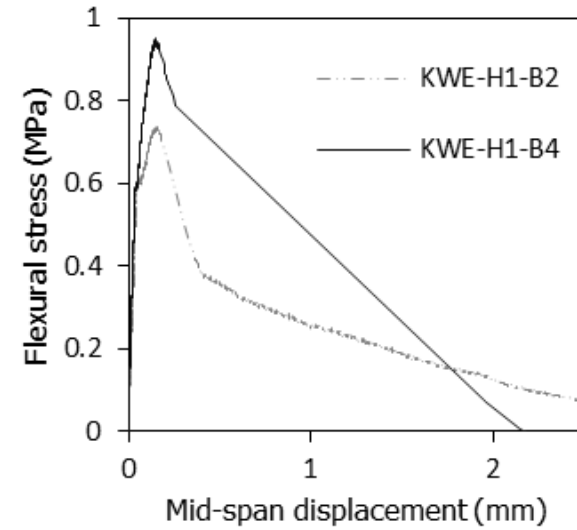
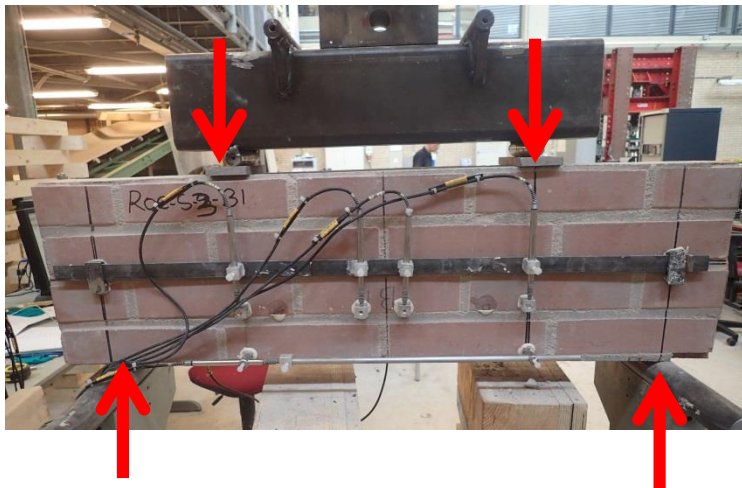
Buiging



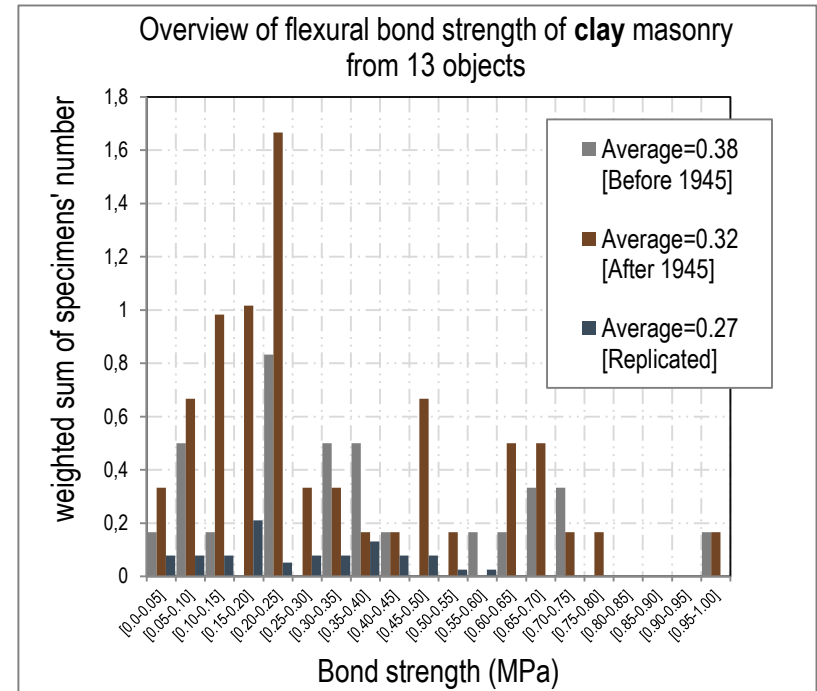
Plane of failure $\perp$ bed joints



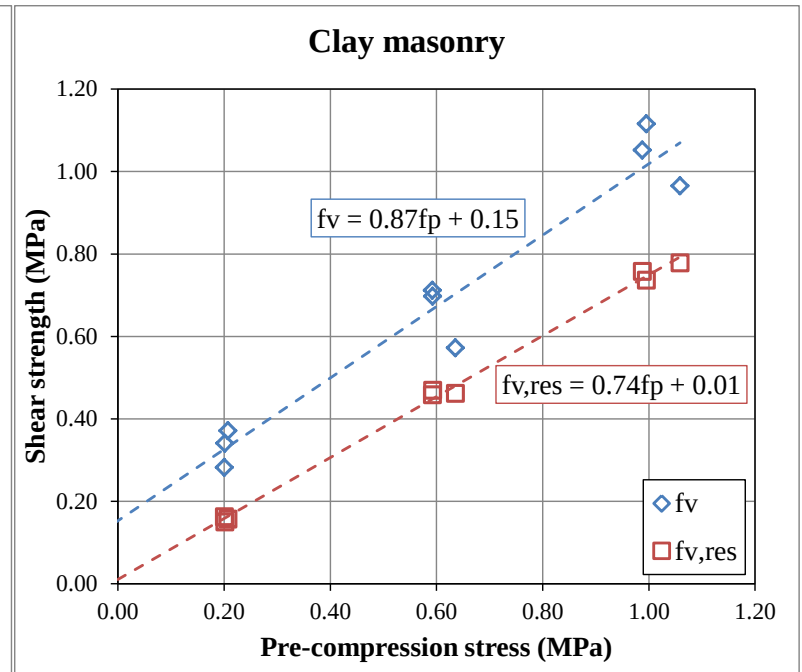
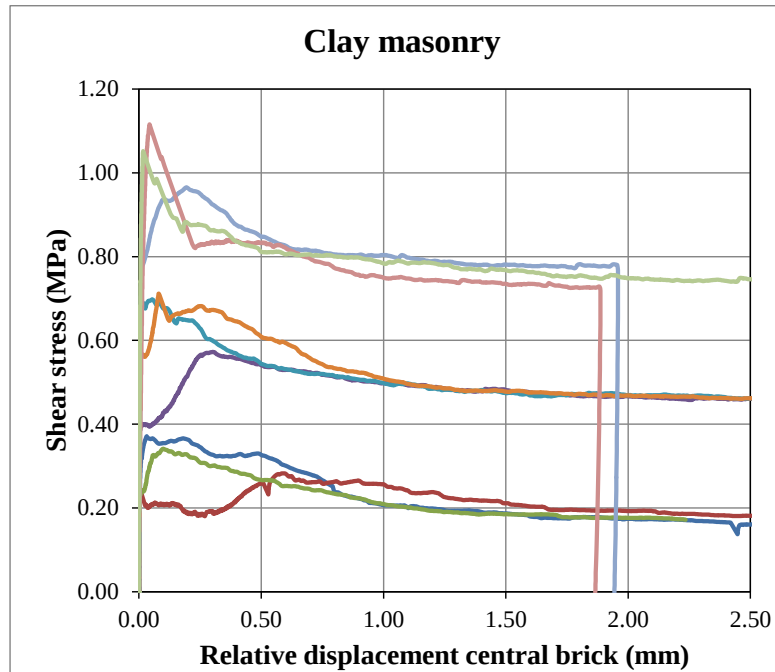
Buiging 2



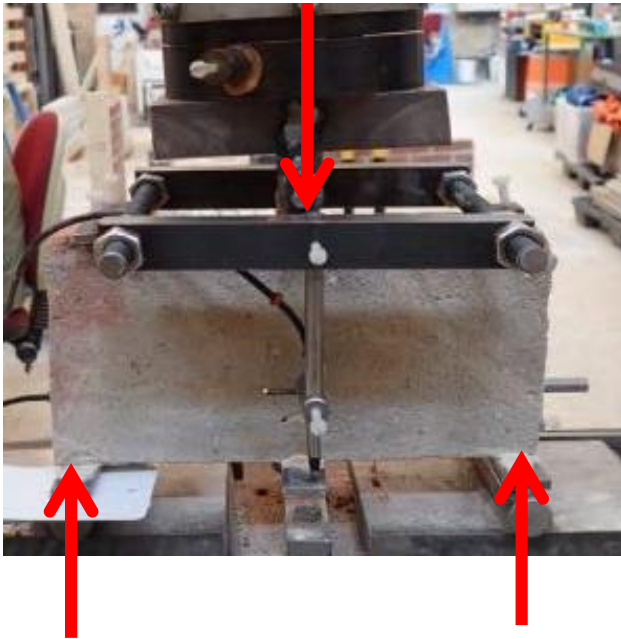
Hechting



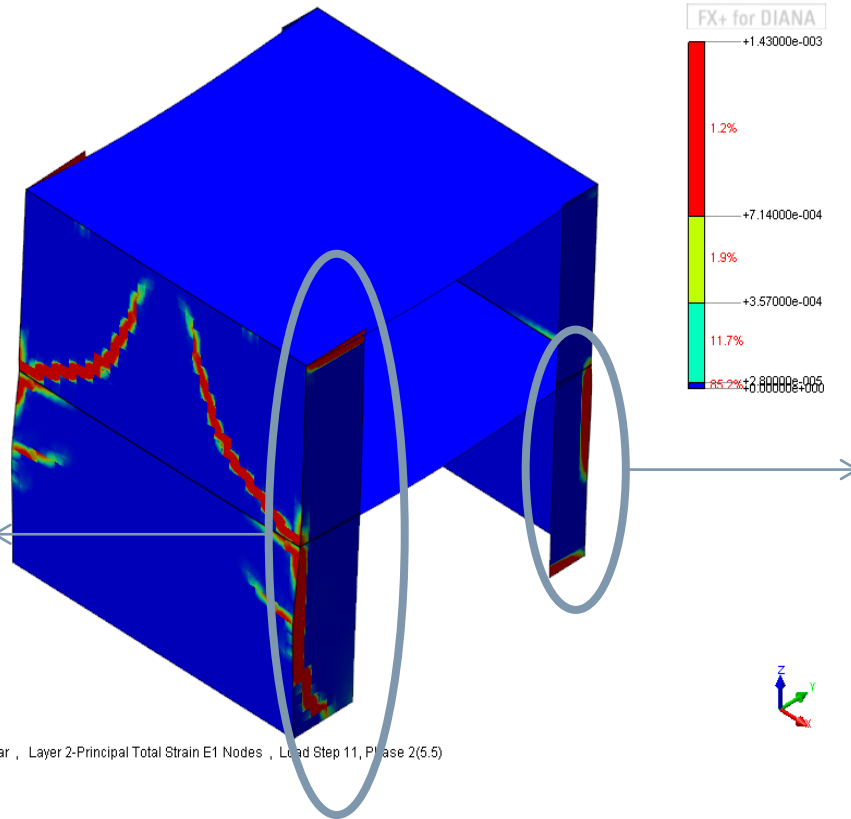
Afschuiving



Buiging op stenen



Conclusies



Dank voor uw aandacht

