

REFLEX

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Pres. Safwat Said
VTI

NVF 34

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Abstract

- In many countries premature break down of asphalt roads is an accelerating problem. The origin is usually increasing traffic volume and axle loads, and the use of super single tires. The main objective of the REFLEX project is to develop a new methodology of road construction and rehabilitation with the use of steel reinforcement fabrics in order to make road structures more cost effective by improving the life time. The method is presume to give thinner road structures and/or longer life cycles, which will lead to a reduction in the use of natural resources. Further, reduction of the need for maintenance, reduction of congestion, reduction of accidents, improvement of safety of road traffic can be expected.

REFLEX

"Reinforcement of Flexible Road Structures with Steel Fabrics to Prolong Service Life"

4:e ramprogrammet, BRITE/EURAM III, DG XII



REFLEX

- 210 man månader
- 3,5 år 03/1999–09/2002
- Total Kostnad 2,3 MEURO (~22 MSEK)
- EU bidrag 53 % (~11,5 MSEK)

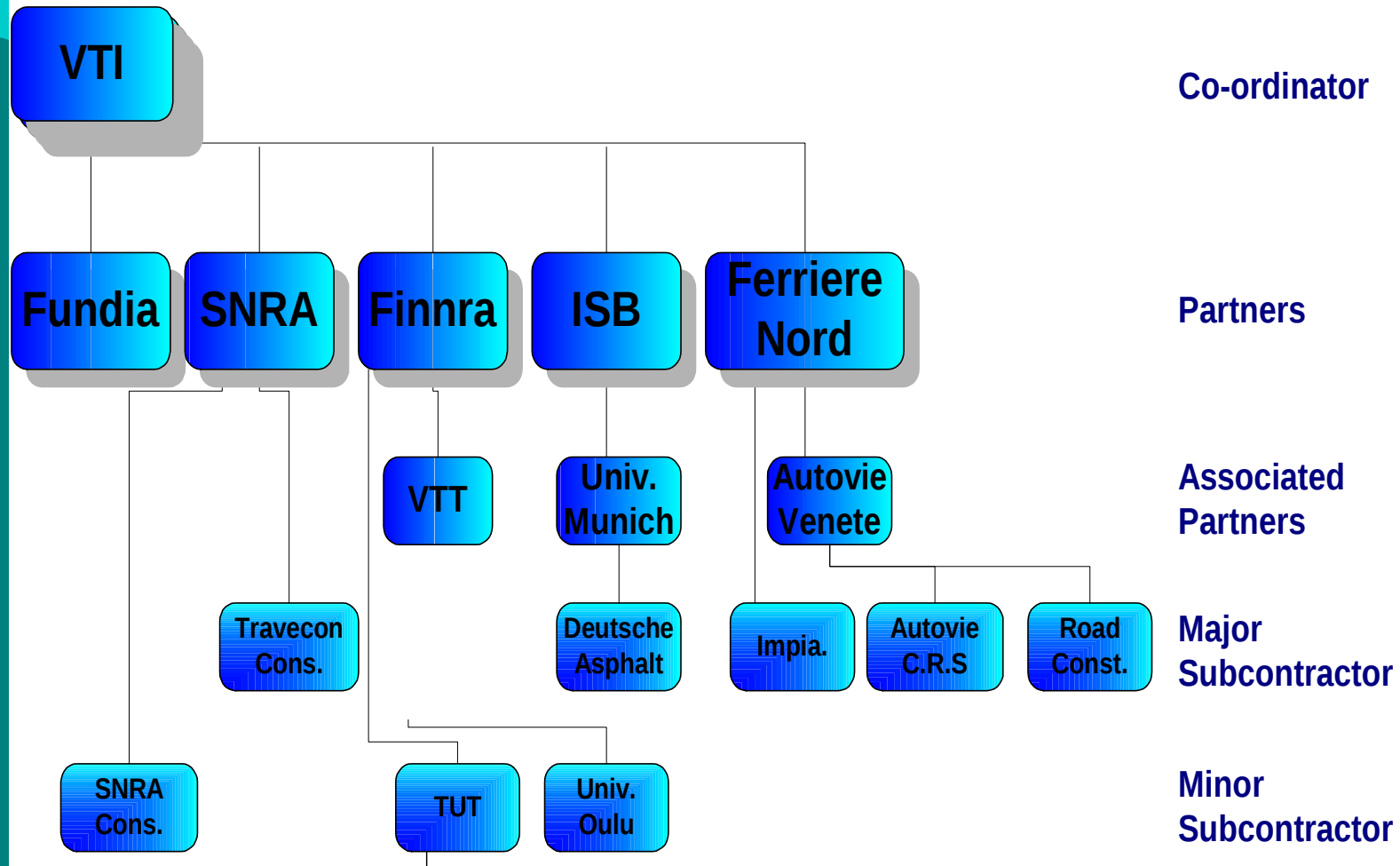
Målsättning

Förstärkning av vägar med stålnätsarmering.

→ förlänga livslängden $> 20 \%$

- höja bärigheten i vägkroppen
- öka motstånd mot krypspår
- motverka tjälsprickor i beläggningsytan
- fördröjning av reflekterade sprickor i beläggningsytan
- motverka sättningssprickor

Projektstruktur



Resultat

- Befintliga vägar
- Accelererad provning
- Laboratorieprovningar
- Provvägar
- Modeller
- Ekonomi och miljö



Rosttest, Fundia

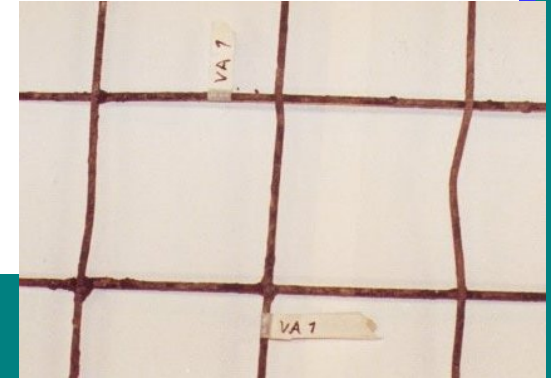
Sample ID: VA 1

Net type: Ø 6 mm # 150 ,Plain bars, under UGM, partially in old oil gravel, in the middle of the paved lane, year 1973.

Result:

Shear strength, kN: Min. 6.6, Max. 9.8

Corrosion grade: Regular rusting, less than 1 mm. Few point rusted.



Sample ID: VA 2

Net type: Same as above, but near shoulder.

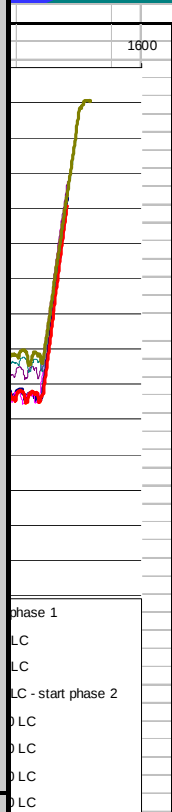
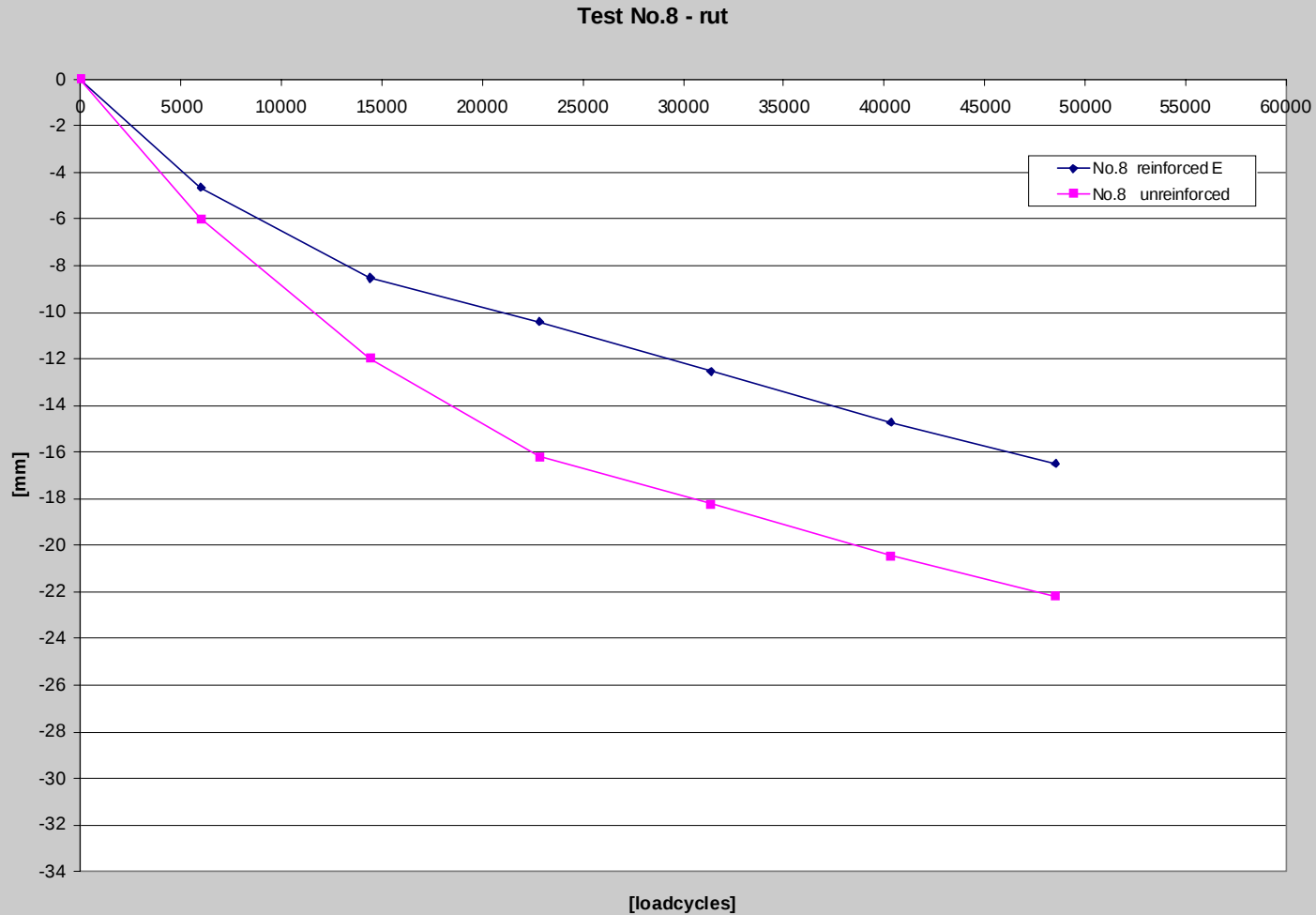
Result

Shear strength, kN: Min. 5.8, Max. 9.0

Comments: Very corroded. Corrosion approx. 2.5 mm .



Stabilitet, TUM



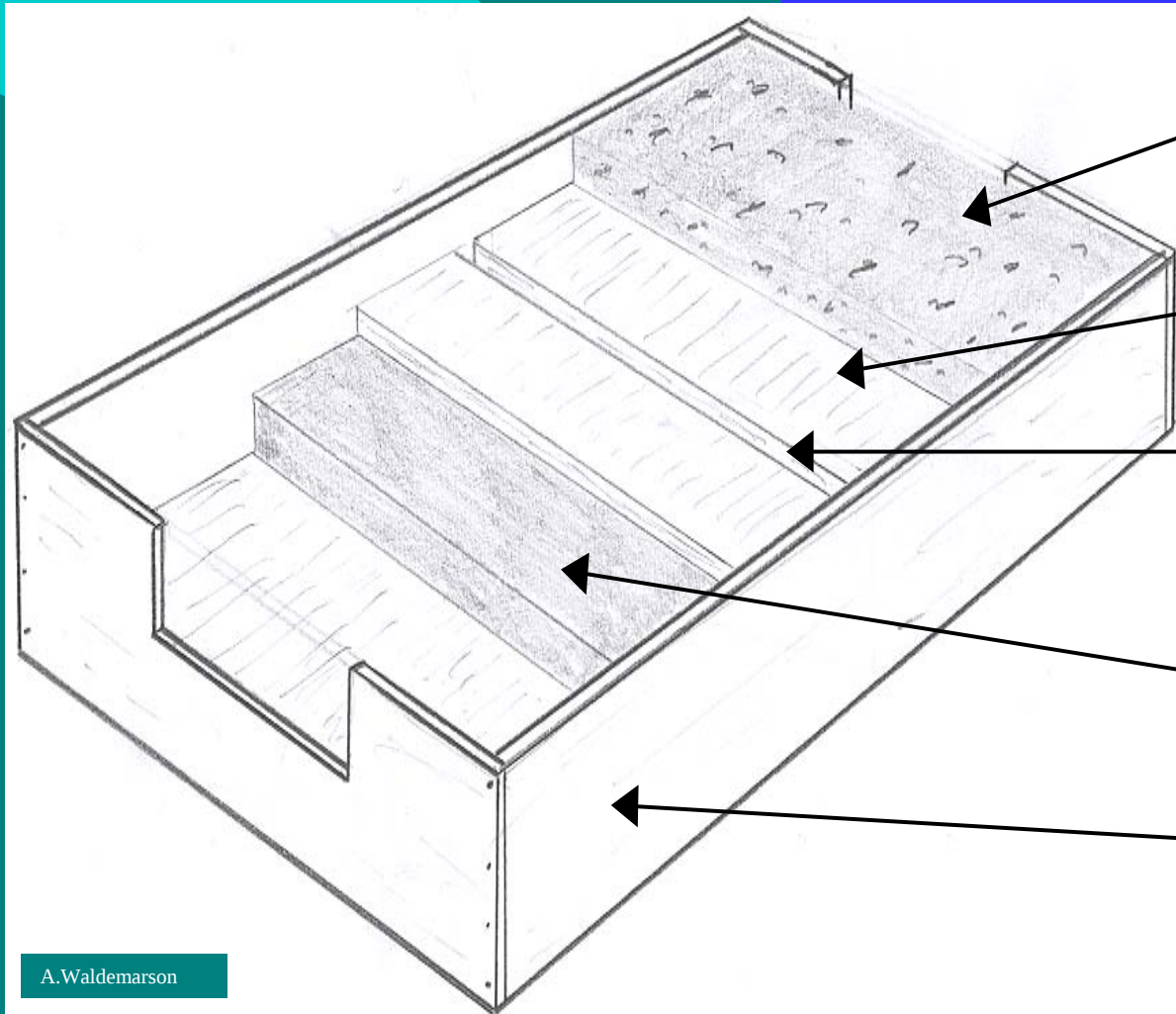
Stabilitet, TUM



Reflektion sprickor, fort.



Reflektion sprickor, VTI



Asphalt slab

Plywood 20mm

10mm gap

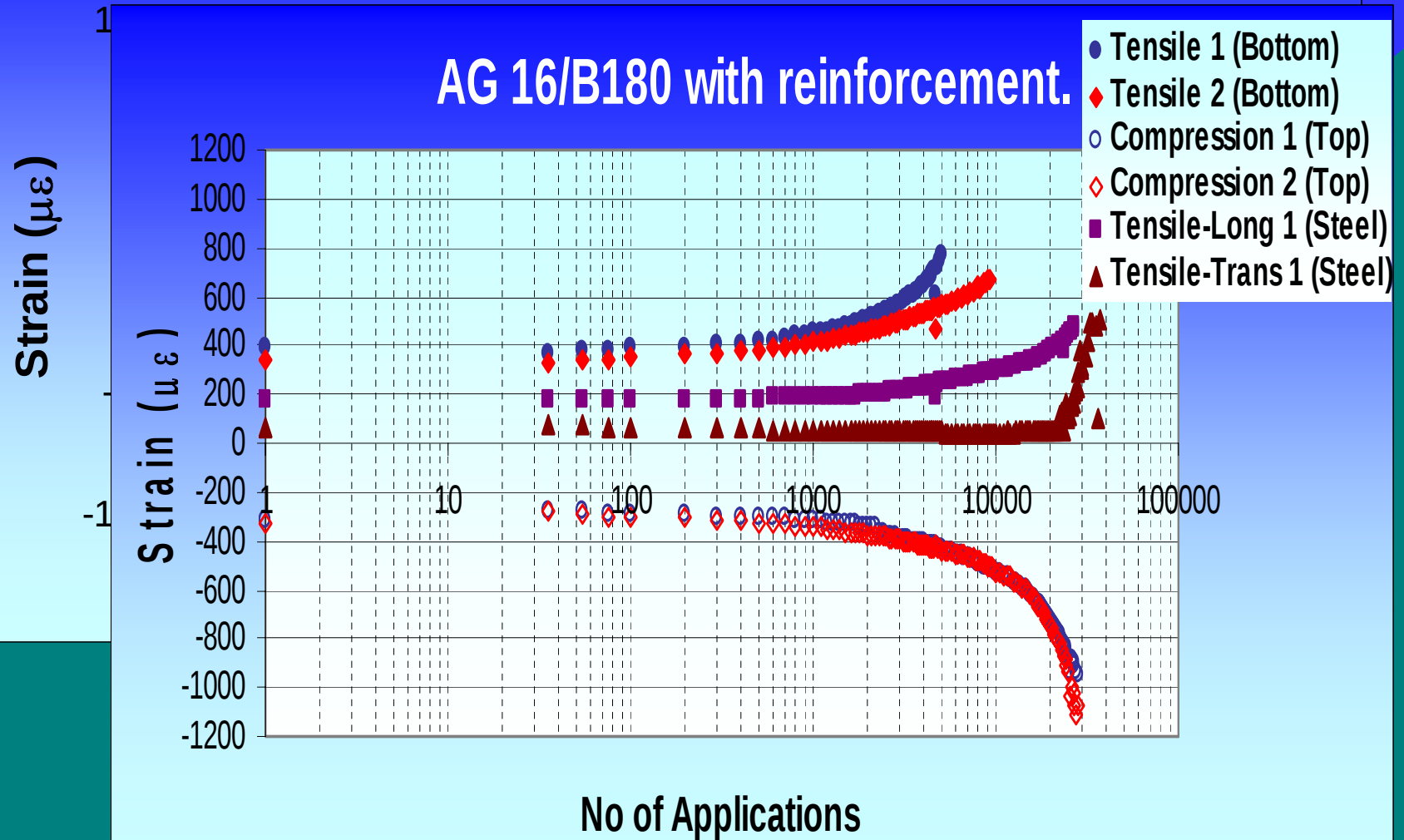
Rubber 40 shore

Plywood box

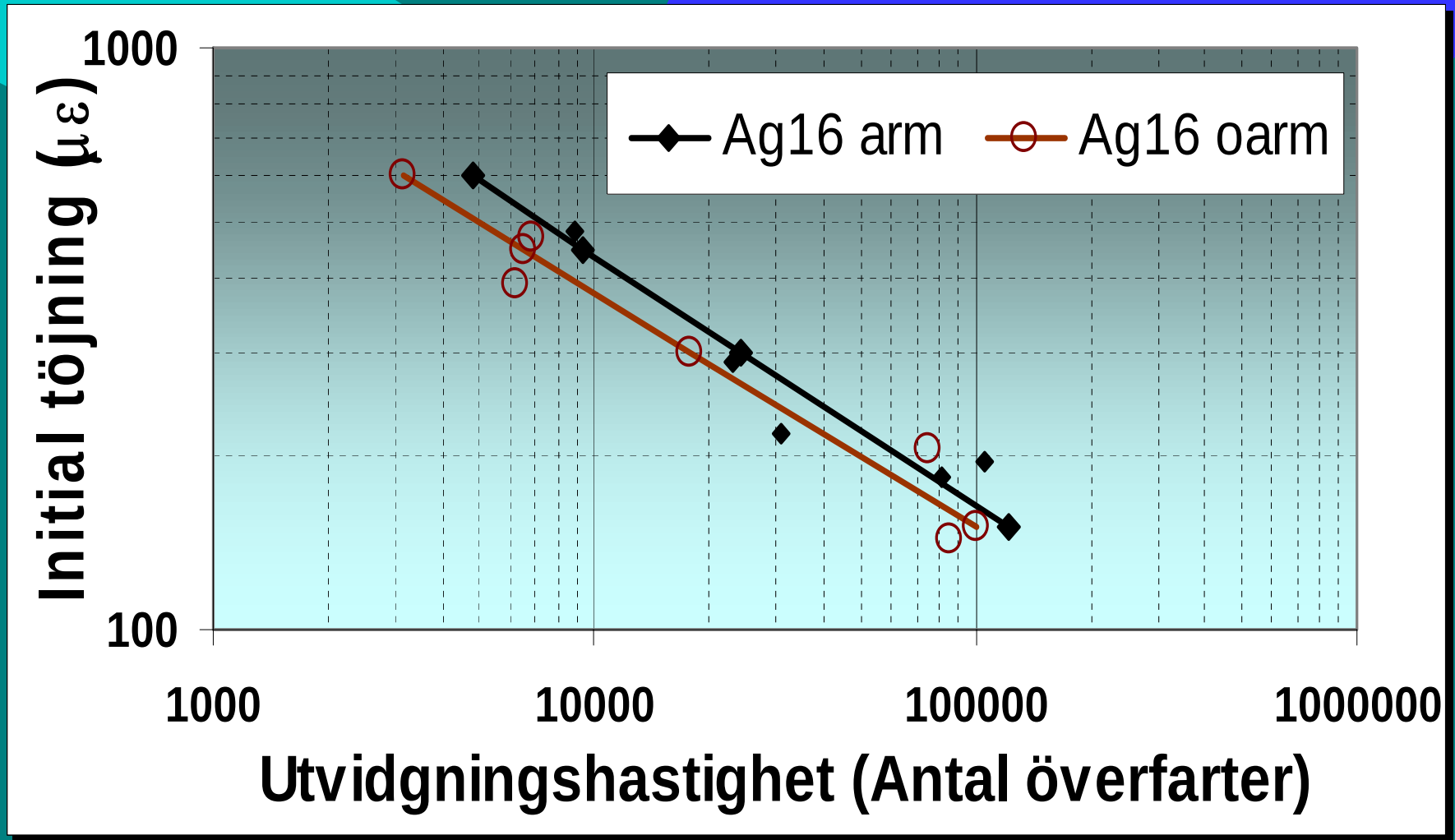
Reflektionssprickor, fort.

AG 22/B180, Strains

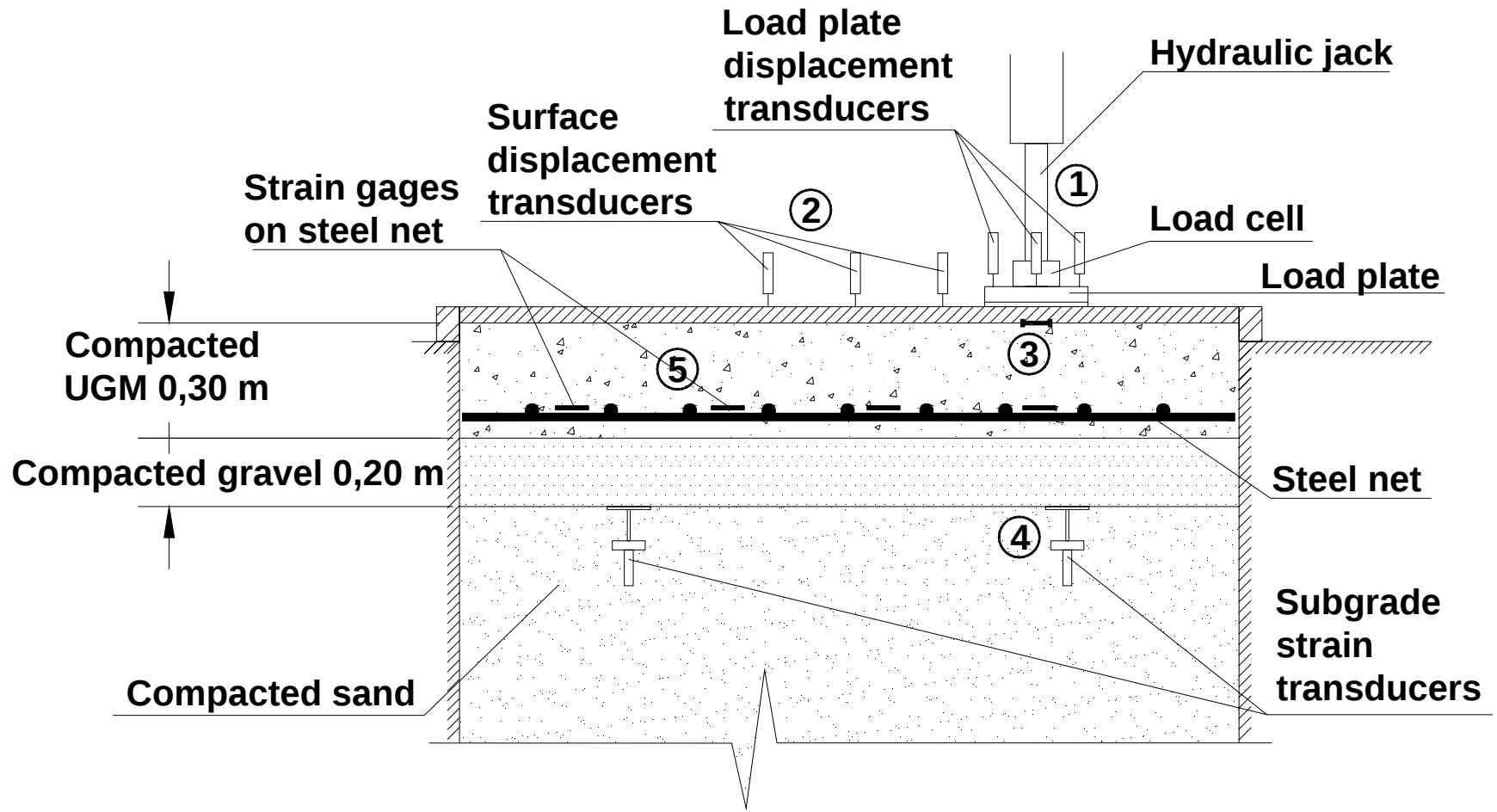
AG 16/B180 with reinforcement.



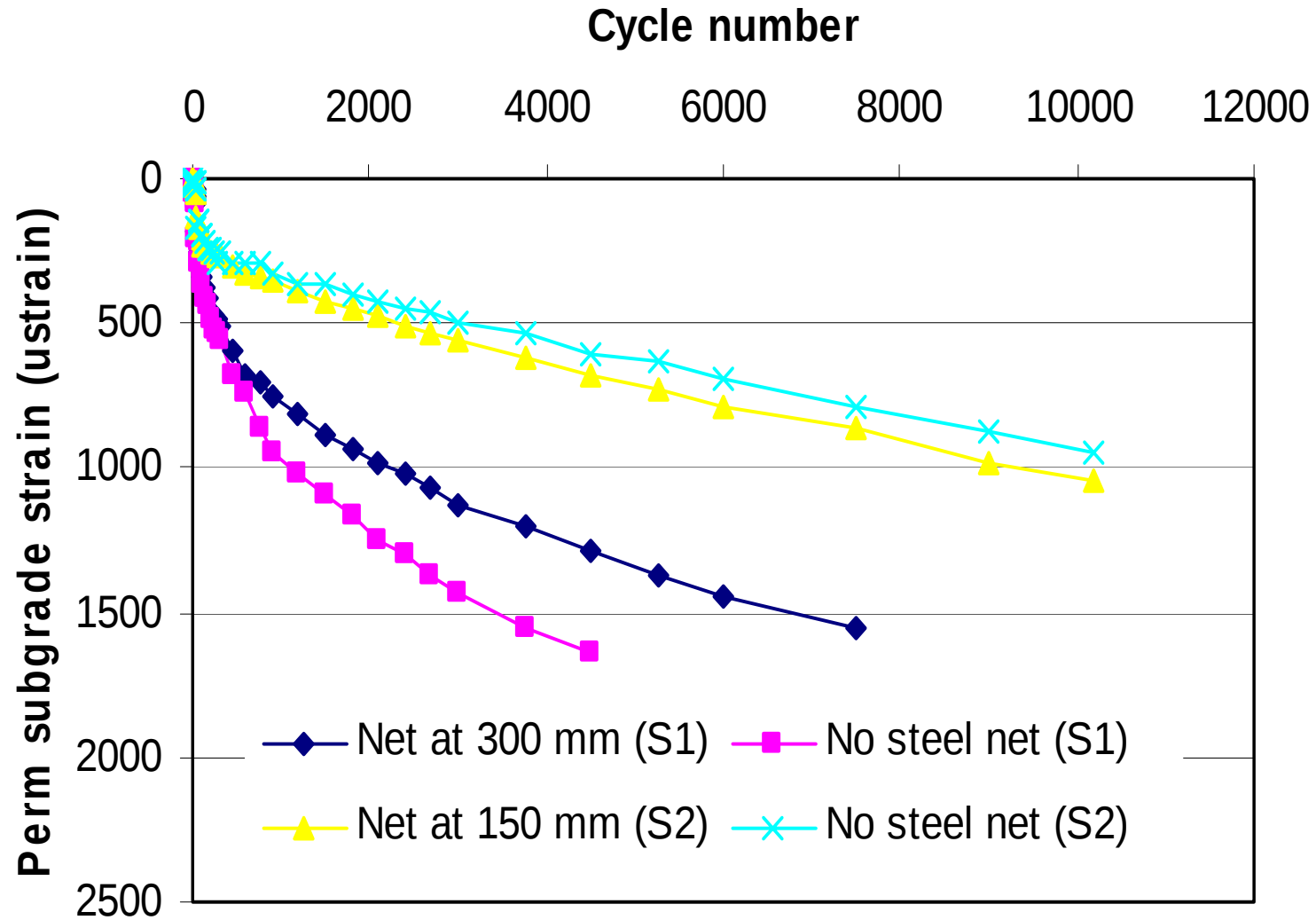
Reflektionssprickor, fort.



Obundna lager, TUT



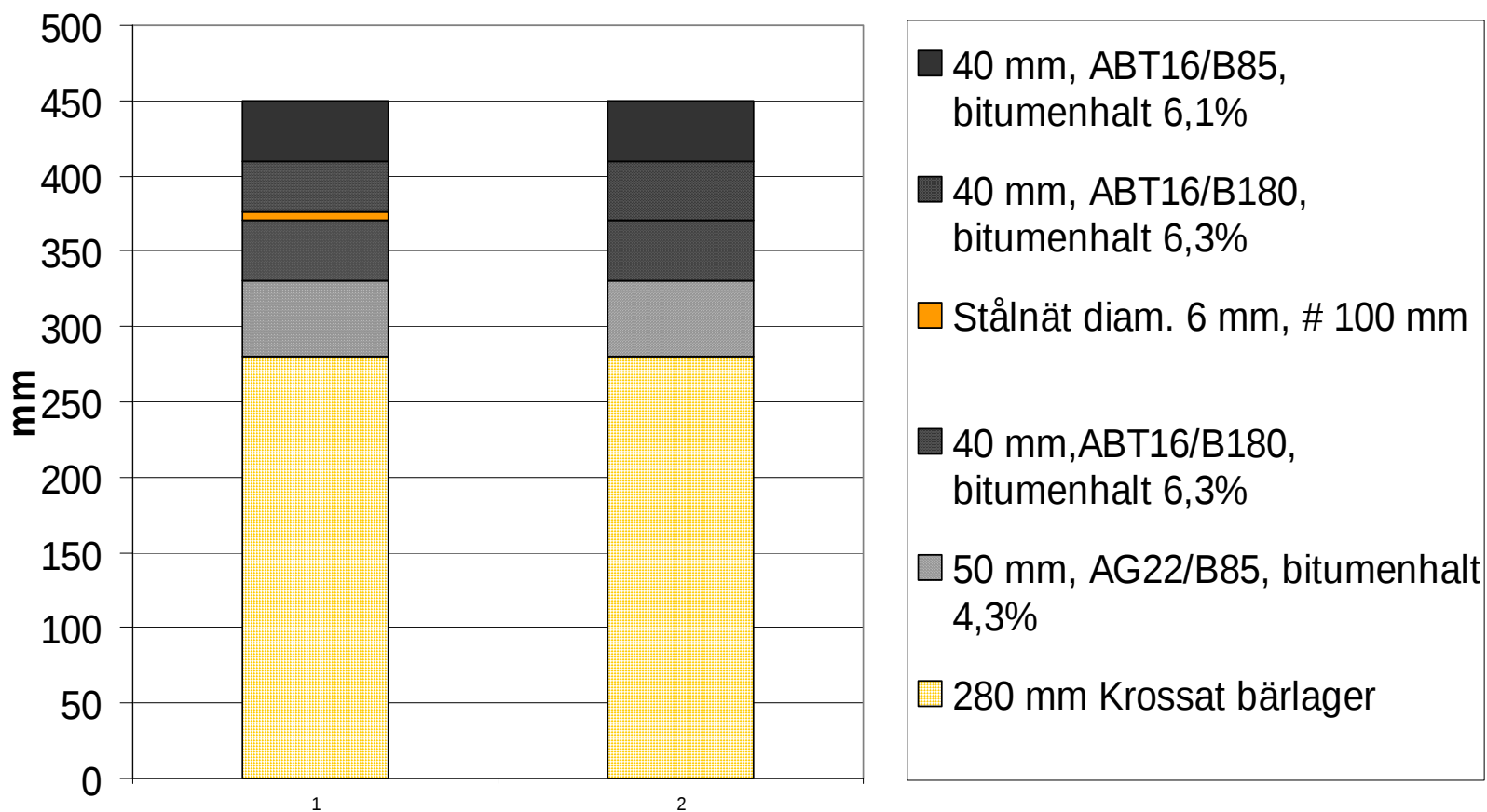
Obundna lager, TUT



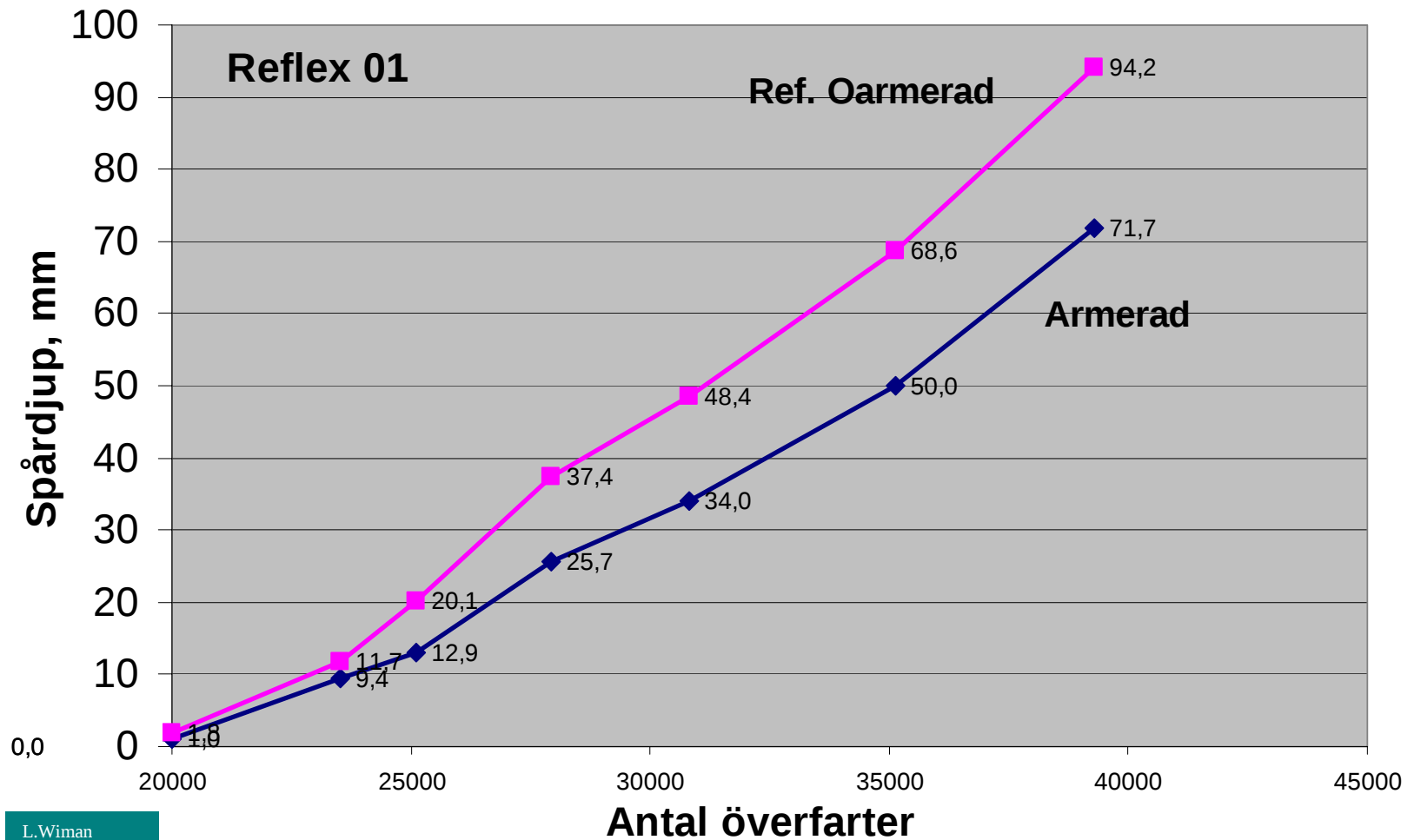


Accelererad provning, VTI

Reflex 01

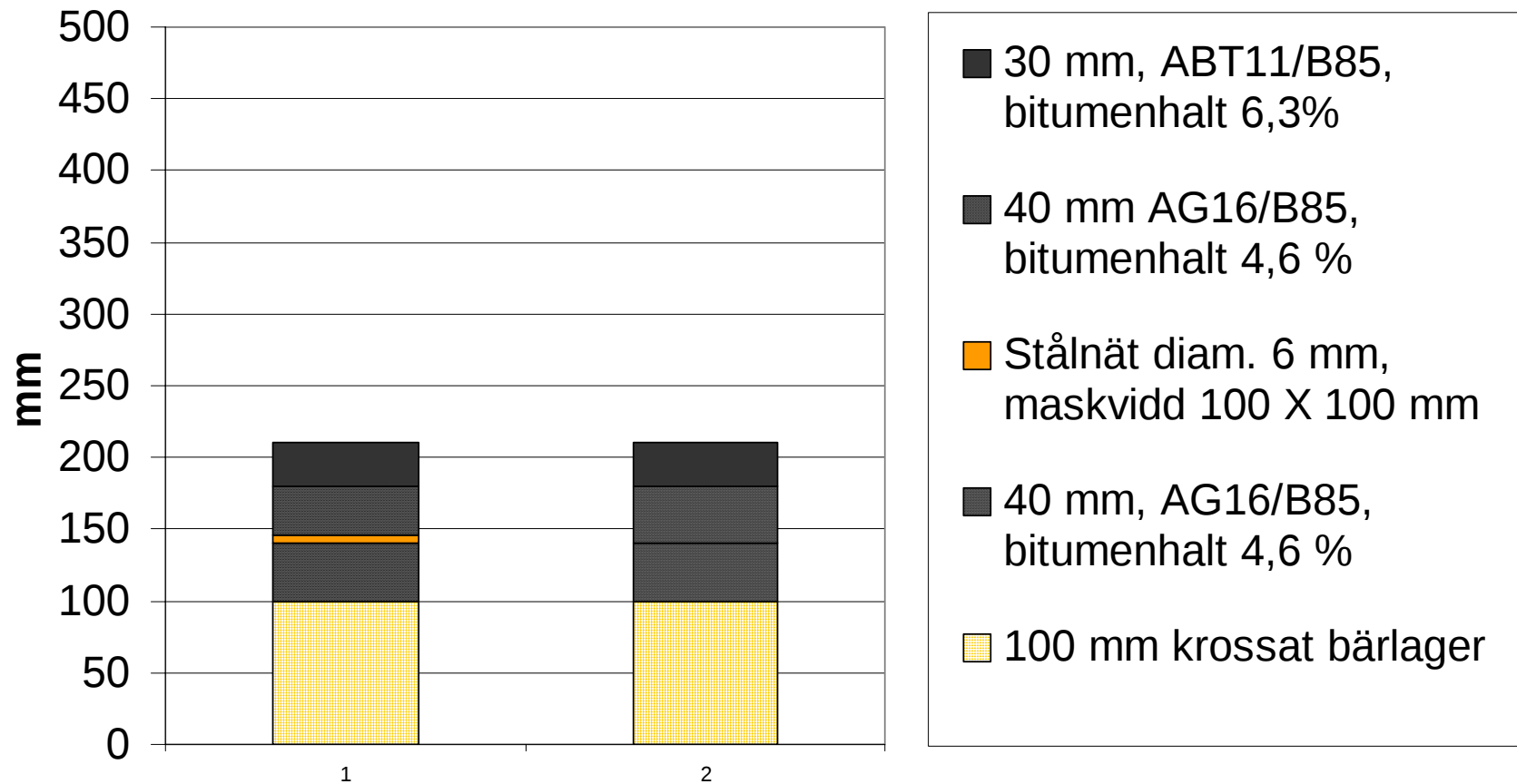


Accelererad provning, VTI

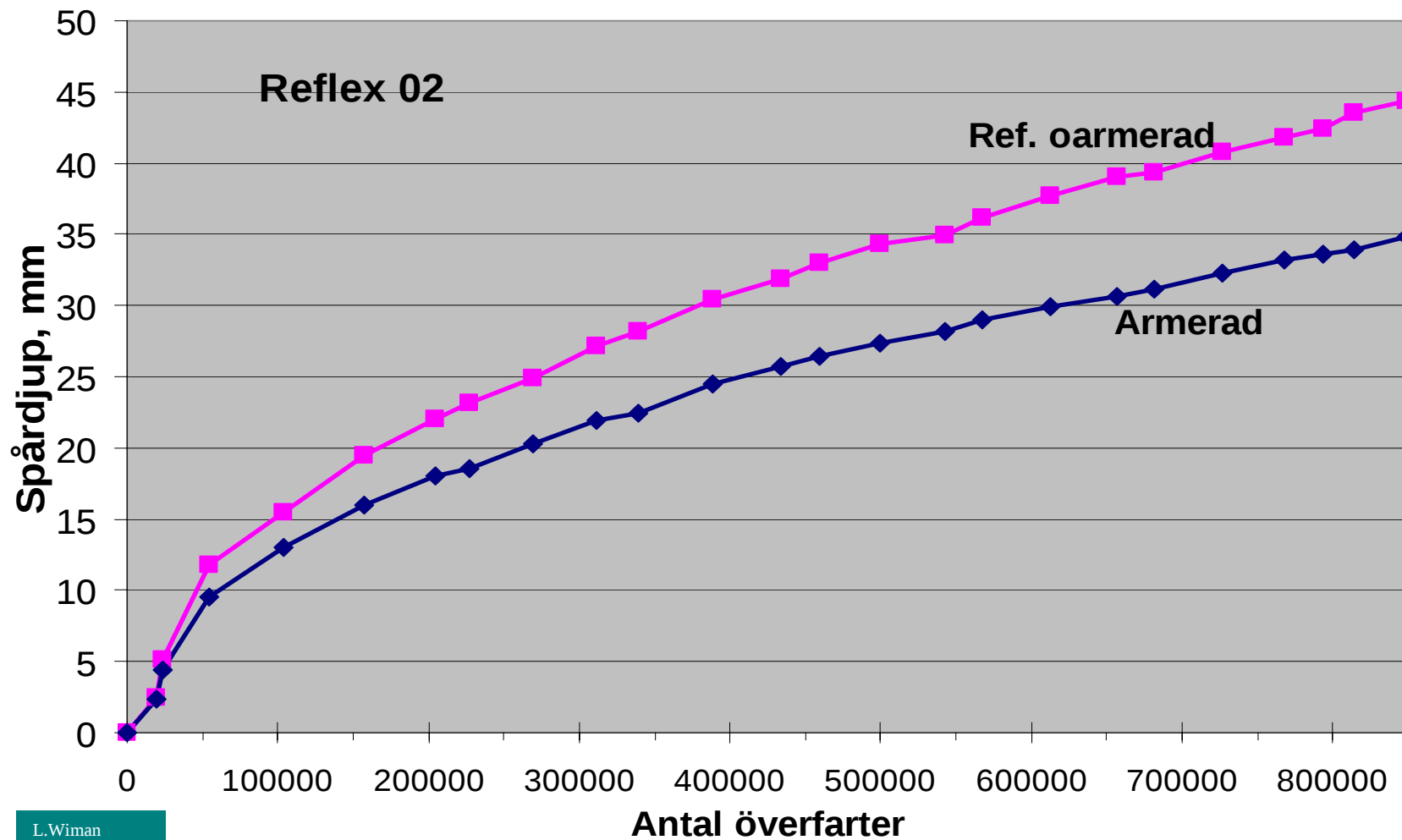


Accelererad provning, VTI

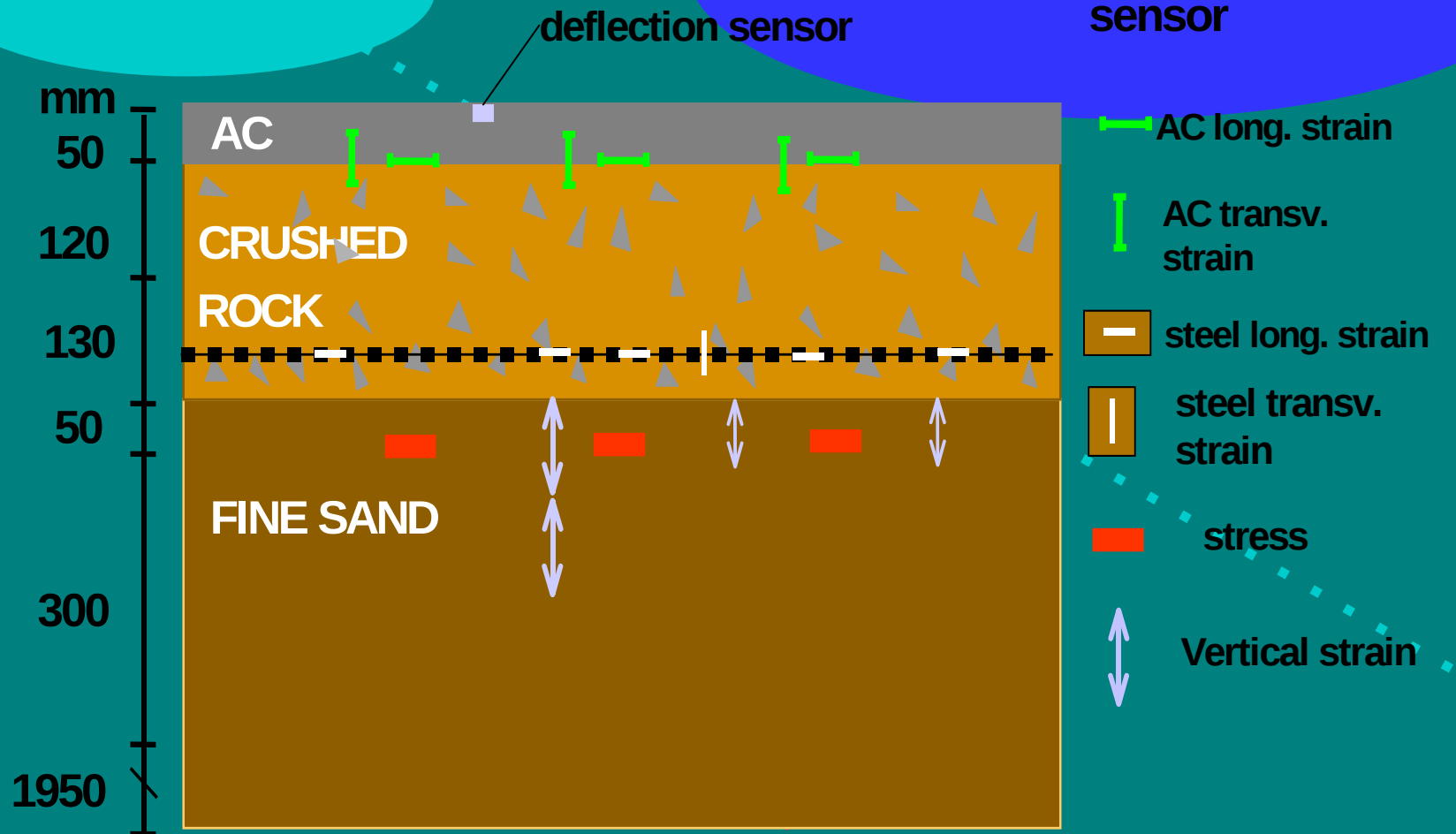
Reflex 02



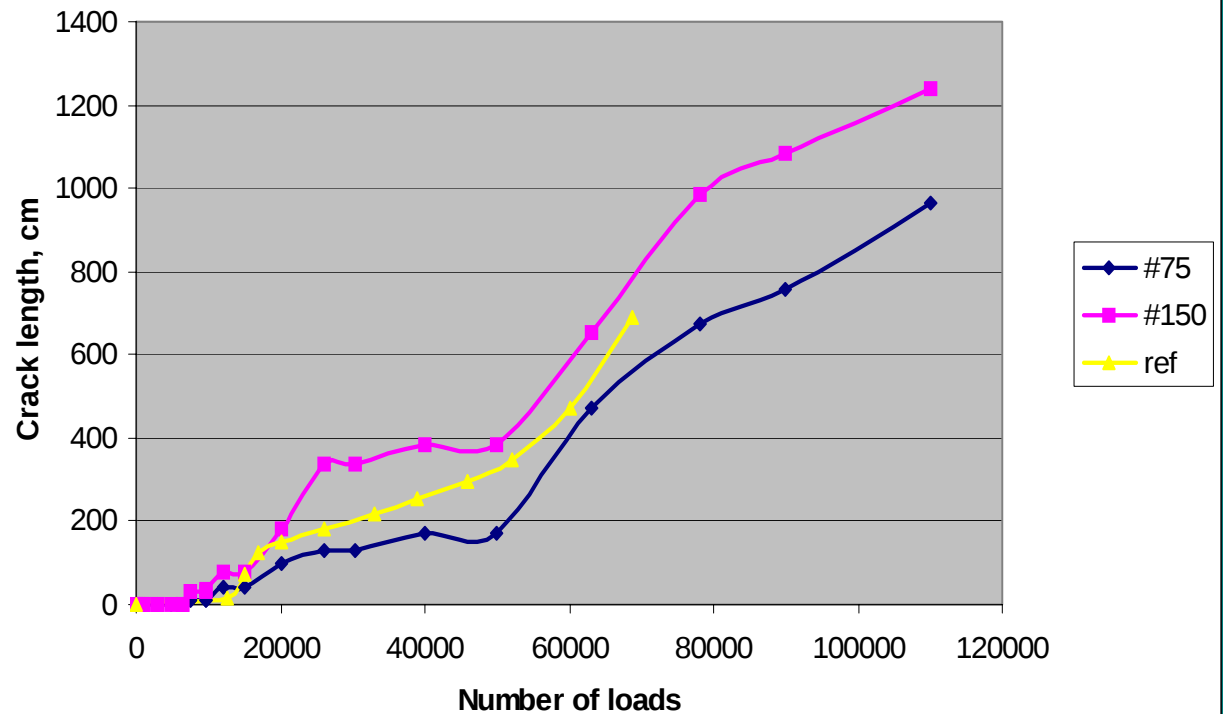
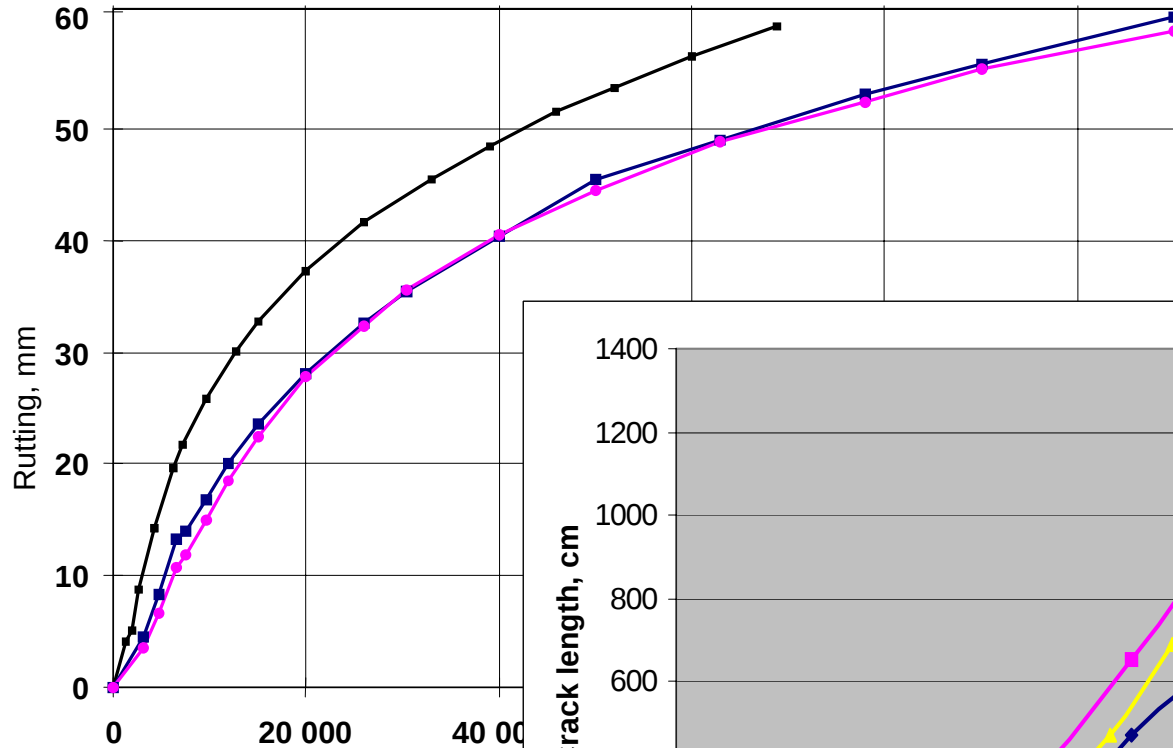
Accelererad provning, VTI



Accelerated proving, VTT



Accelerated proving, VTT



Provvägar

- Väg BD 600 Sundom
- E6 Ljungskile
- Kristinehamn Östra Ringvägen
- Autostrada E55, IT
- Busshållplats i München, DE
- Vägavsnitt i Trier, DE



Provvägar

Väg BD 600 Sundom



Provvägar

Väg BD 600 Sundom, fort.



Provvägar

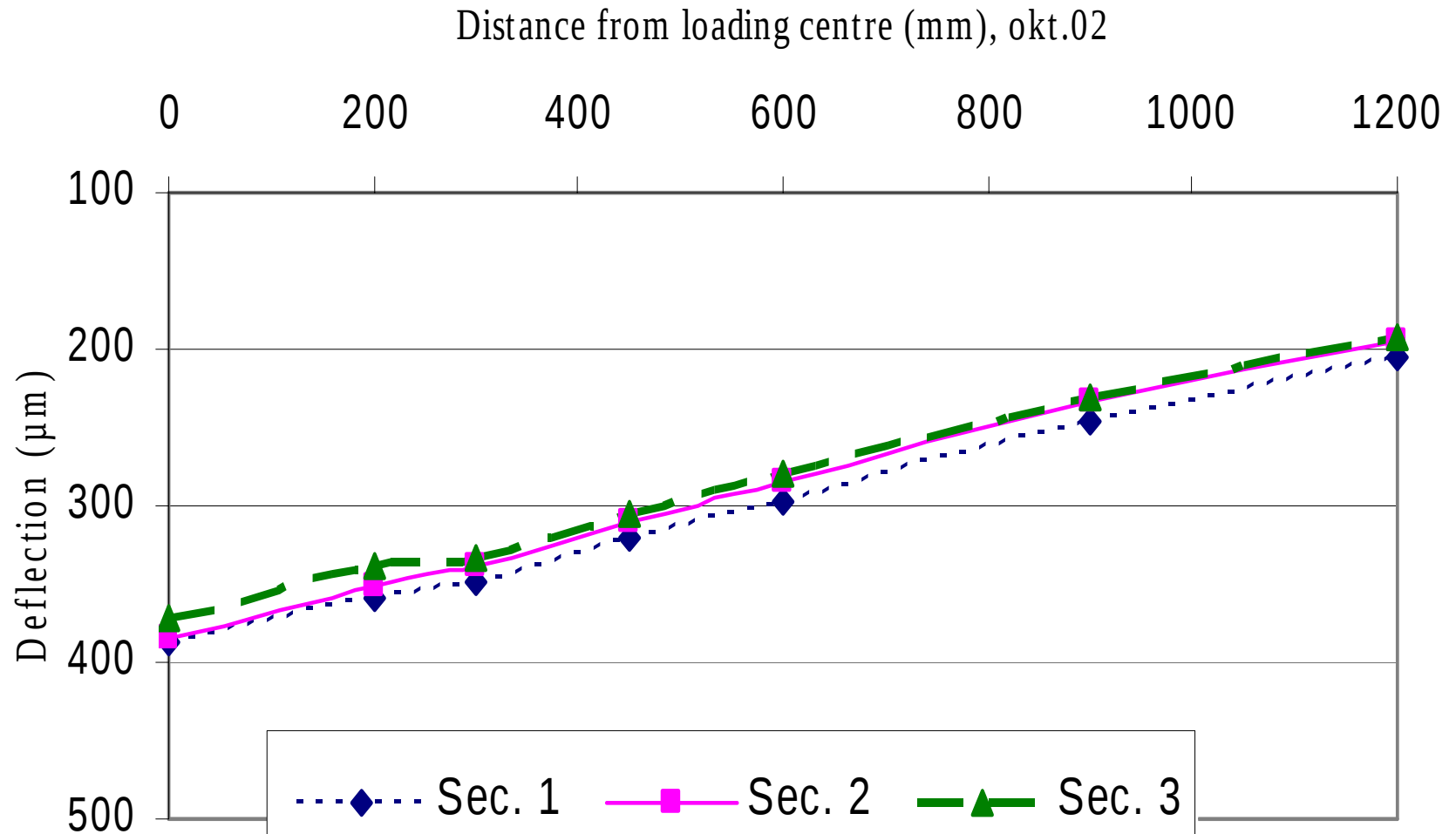
E6 Ljungskile



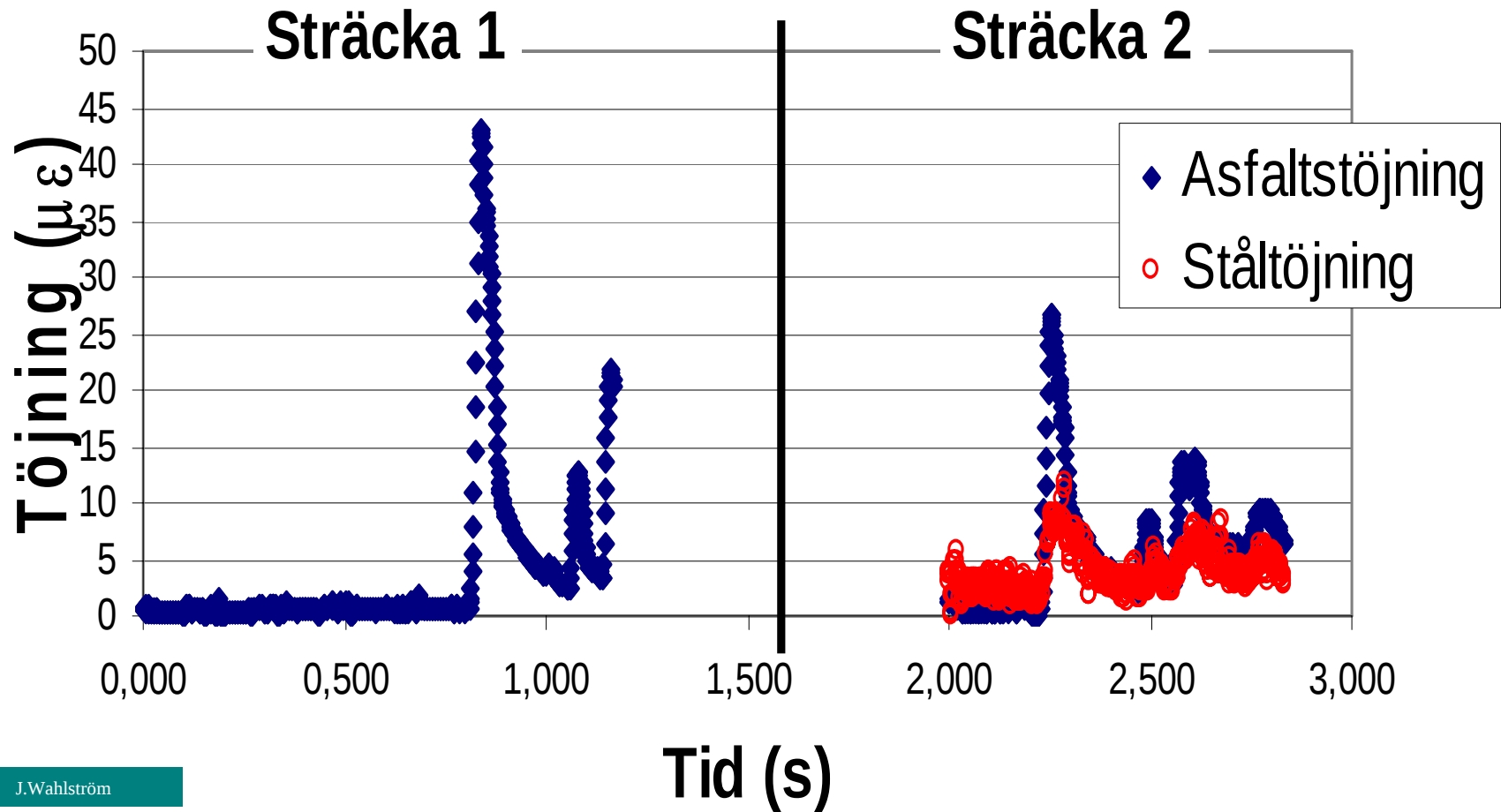
E6 Ljungskile, asfalttöjningsgivare



E6 Ljungskile

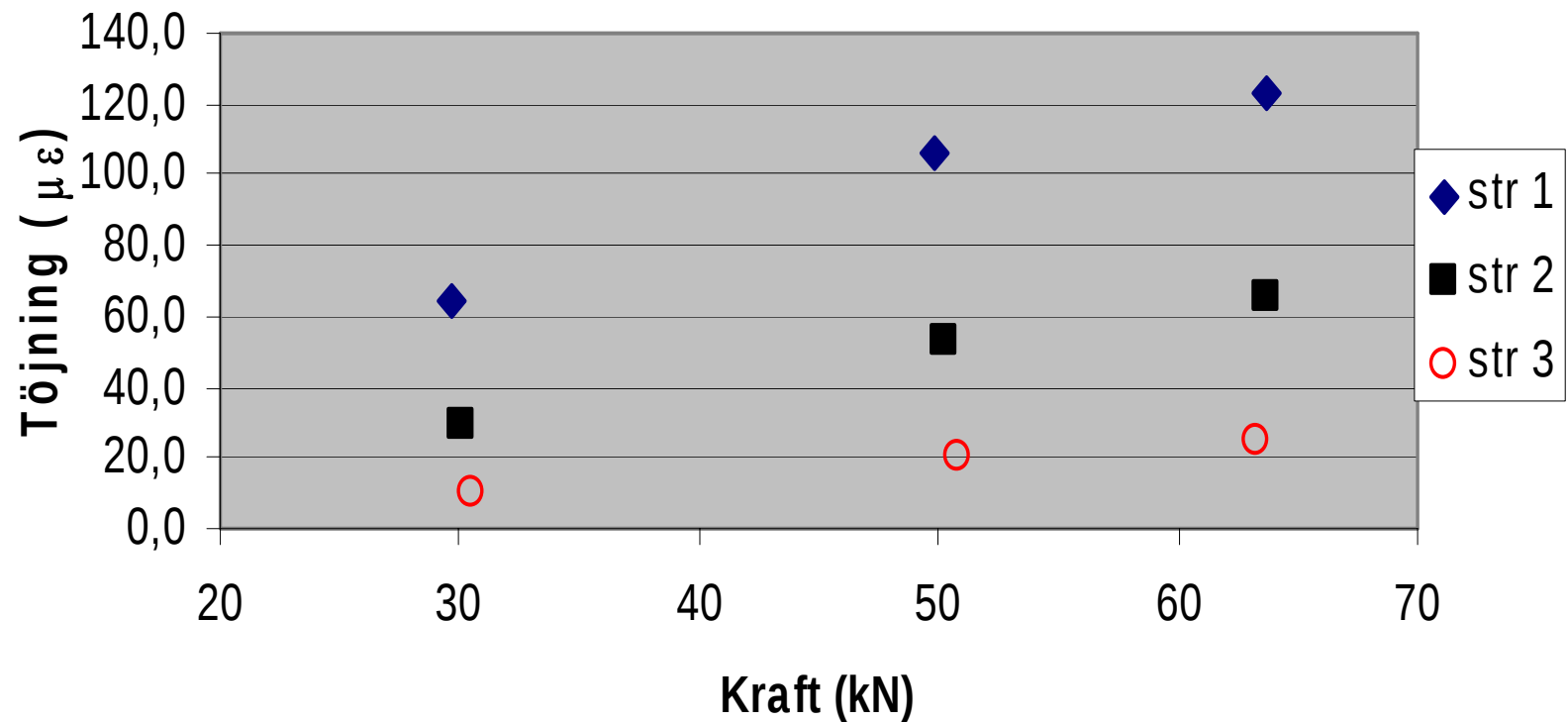


E6 Ljungskile, fort.



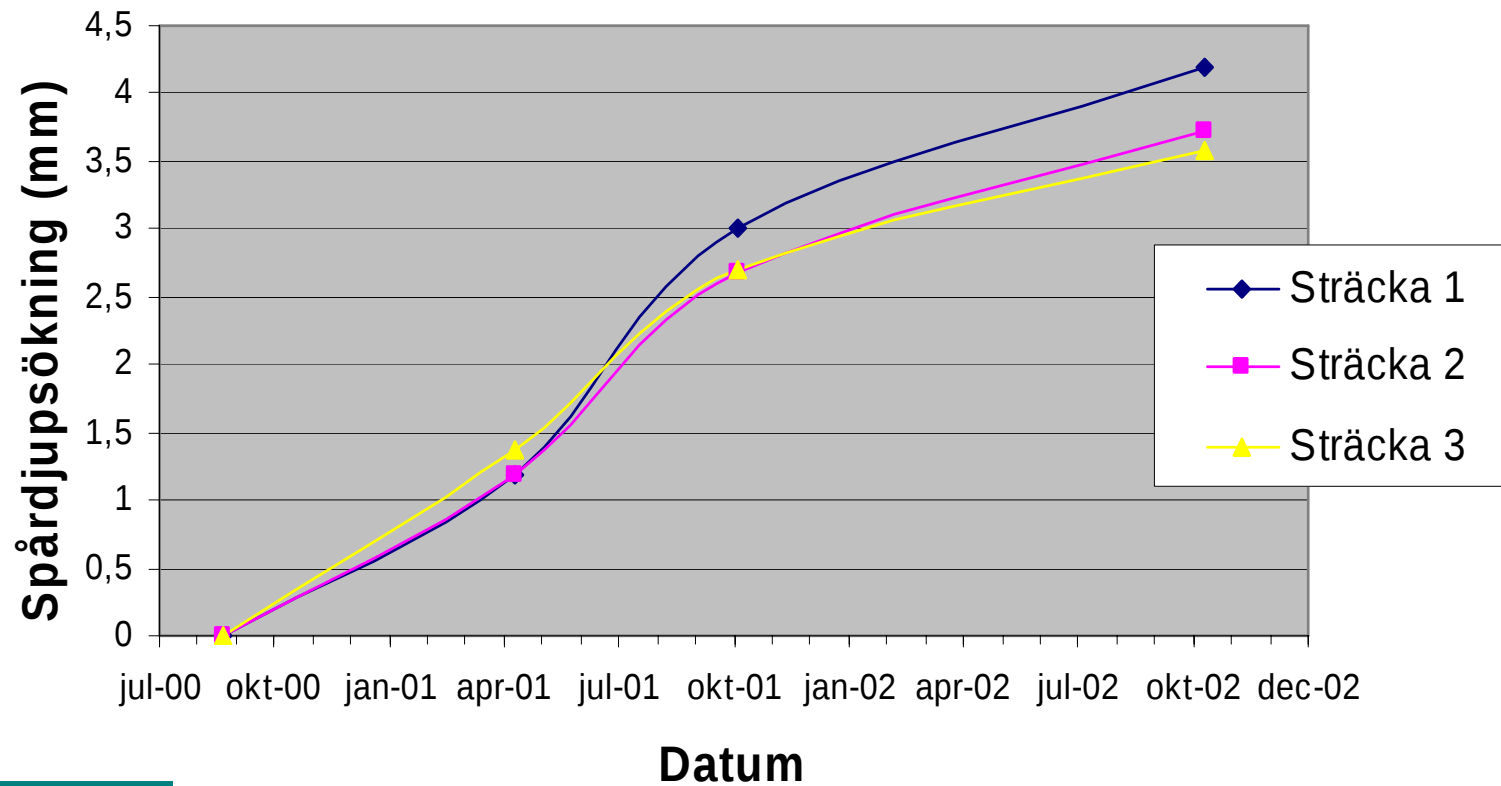
E6 Ljungskile, fort.

Asfaltstövningar, 021010



E6 Ljungskile

E6 Ljungskile Spårdjupsökning



Slutsatser

Målsättning



förlänga livslängden > 20 %

- **höja bärigheten i vägkroppen**
- **öka motstånd mot krypspår**
- **motverka tjälsprickor i beläggningen**
- **fördröjning av reflekterade sprickor i beläggningssytan**
- **återvinning**

