



Laboratorium, Prinses Elisabethplein 7, 1030 Brussel

**Ackx D**  
**Zingametall bvba**  
**Rozenstraat 4**  
**9810 Eke**

Uw kenmerk

Ons kenmerk

Bijlage

Datum  
16/04/2008

**Subject: Adherence of concrete to rebars – differences observed between Zinga coated and other rebars**

Sir,

You sent us different type of rebars (steel reinforcement in concrete mass):

- Type A: steel sandblasted, protected with Zinga prior to pouring of concrete
- Type B: steel not treated
- Type C: steel sandblasted

As agreed upon, we are ageing the rebars using SO<sub>2</sub> (Kesternich test equipment). On regular intervals, we inspect one rebar of each type. On your request, we cleave the concrete, in order to set free the steel reinforcement.

#### **Observation**

It is clearly more difficult to cleave the rebar bloc containing the steel rod protected by Zinga. The adherence of the concrete to the steel rod is better. The actual cleavage happens in the concrete. See photos on next pages

Johan Sevenants  
Master in Chemistry

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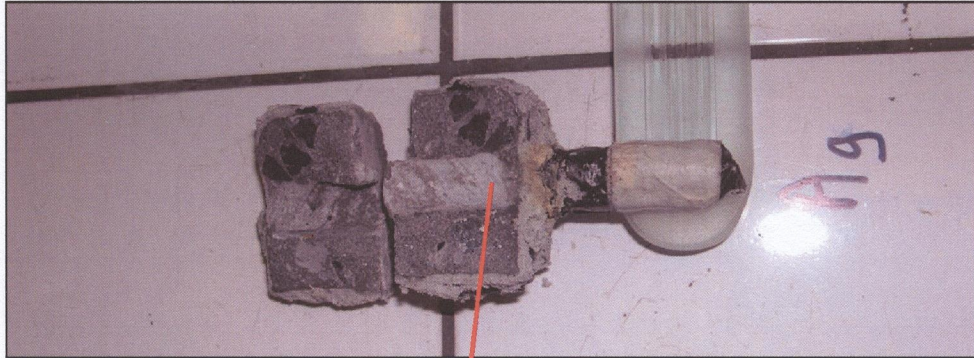
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**Photos of rebars after cleaving**



Thin layer of cement and Zinga on steel rod

After cleaving, we noticed the rupture happened in the concrete layer, close to the steel rod. It took more force and cleaving attempts than with the uncoated rebars.



The other two rebars cleaved neatly between steel and concrete, which indicates a weaker adherence. As an adhesives specialist, I can confirm that cleavage between substrates usually indicates a weaker bonding than the internal strength of the substrates, which is generally considered a lesser adherence.

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