

#### 4. Industrial applications

The Road and Railway Construction Company RRCC (Hungarian) ordered industrial reference testing once before application once after manufacturing.

First test series involved 60 cubic concrete specimen ( $200 \times 200 \times 200$  mm). The even numbered cubes were crushed at the department using an AMSLER tester fitted with the newly developed hinge, the odd numbered cubes were crushed at RRCC using a Hungarian made compressive strength tester.

##### Results

|                      | RRCC          | Department   |
|----------------------|---------------|--------------|
| Average Strength     | 32.52 MPa     | 35.75 MPa    |
| Deviation, $s$       | 3.46<br>(11%) | 2.46<br>(7%) |
| Strength class $R_k$ | 25.94         | 30.94        |

Difference in average strength: 9%  
 Difference in strength class: 16%

This indicates that RRCC would have classified this concrete as C20 and the Department of Building Materials would have said C25 according to the same MSZ 4719 Standard (Hungarian Standards 4719).

Similar 30—30 tests when both machines were fitted with custom built hinges gave the results below:

|                      | RRCC           | Department    |
|----------------------|----------------|---------------|
| Average              | 33.68 MPa      | 33.53 MPa     |
| Deviation, $s$       | 1.13<br>(3.4%) | 1.2<br>(3.6%) |
| Strength Class $R_k$ | 31.76          | 31.49         |

Results indicate that two completely different machines (in make and structure) can produce identical results if the previously described spherical hinges are fitted.

Dr. István ZSIGOVICS H-1521, Budapest