

eQUALITY ASSURANCE

SOFTWARE TO DESIGN CONCRETE MIXTURES.

PROFESSIONAL VERSION.



Aggregate form

Plant: 69 Parma Company: SOT SOCIETÀ TEST

Form code: SKGTEST01 Sample date: 25/09/2006 Reception date: 25/09/2006

Constituent: BSSABIA Type: naturale Sub-type: frantumato

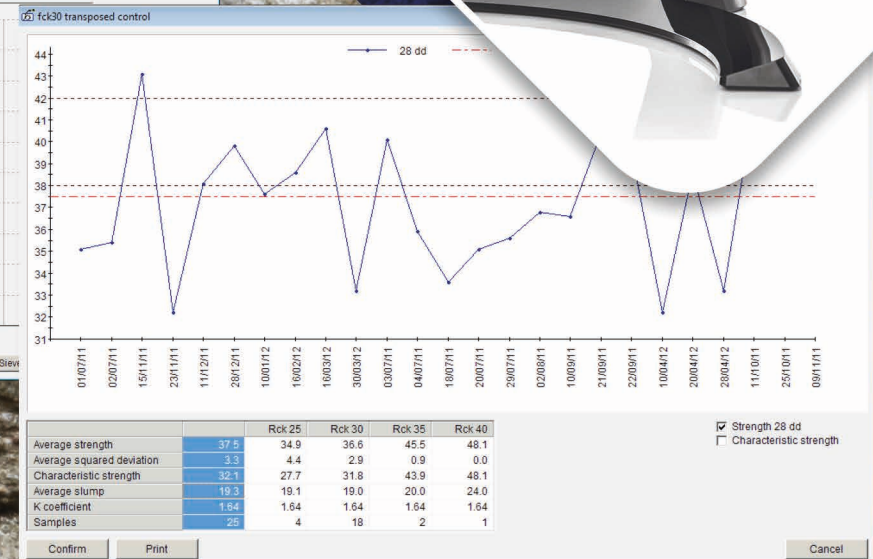
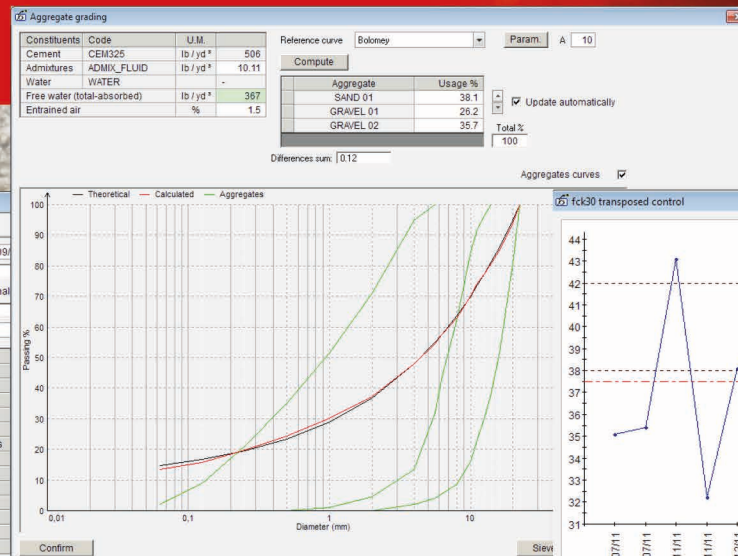
Description: SABBIA CALCEA d/D: 0 4 Nominal

Supplier: CAVE PANARO Source quarry: MARANO

Dry sample (g): 1000 Wet sample (g): 1026 Total moisture: 2.60% Various notes:

GRADING ANALYSIS				CHARACTERISTIC			
Sieves	Retained partial	Retained cumulative	%	Fineness modulus	Passing cumulative	%	
63					1000	100.0	Simplified petrographic description
45					1000	100.0	Shape and texture
40					1000	100.0	Fineness modulus
31.5					1000	100.0	Passing at sieve 0.063 (fines content)
22.4					1000	100.0	Content of clay lumps and crumbly particles
16					1000	100.0	Content of light particles and vegetable fragments
14					1000	100.0	Degradability to attacks of sulfur solutions
12.5					1000	100.0	Content of water-soluble chlorides
11.2					1000	100.0	Content of acid soluble sulphates
10					1000	100.0	Total sulfur
8					1000	100.0	Apparent density / bulk density
6.3					1000	100.0	Real / absolute density
5.6					1000	100.0	Average grain density (specific weight)
4	50	50	5.0	5.0	950	95.0	
2	240	290	29.0	29.0	710	71.0	
1	195	485	48.5	48.5	515	51.5	
0.5	165	650	65.0	65.0	350	35.0	
0.25	140	790	79.0	79.0	210	21.0	
0.125	120	910	91.0	91.0	90	9.0	
0.063	70	980	98.0		20	2.0	
Bottom	20	1000		3.18			

Confirm Save copy Sieves series Print Cancel





QUALITY ASSURANCE is a programme which talks to the designer of concrete mixtures, which guides and assists him in optimizing needs and choices. It was developed involving concrete technology experts in quality control and in the management of laboratories and large production realities.

QUALITY ASSURANCE is suited to the needs of those who need to manage both the single plant and the more complex reality. It helps the user whether he needs to produce a single mix, or in case he has to develop or update an entire mix-set. It suggests the most appropriate options and corrections, but the choice can be customized.

QUALITY ASSURANCE allows to manage an archive for each complete system of characteristics, test results and limits of acceptance of raw materials; in particular with respect to concrete aggregates, their designation according to UNI EN 12620.

The study of the mix or the mix-set can be set on single grading analyses or on the average of a series of grading analyses contained in the archive. The programme user selects the reference curve amongst the four continuous provided (*Fuller, Modified Fuller, Bolomey, Faury*) or a suggested discontinuous composition, or the user can simply set a curve of reference. Finally, he can accept or change the resulting proportions. Based on the proportioning of the components of the mixture and their relative density, **QUALITY ASSURANCE** processes the unit weights according to the moisture of aggregates. The user can accept or change the weights after processing ends.

If the user wants to continue to develop an entire mix-set by composition, it is possible to develop further mixes, also according to the absolute volume method, but for dosages covering the range of the whole mix-set. If the user wishes to proceed with greater detail, **QUALITY ASSURANCE** will guide him during the execution of test mixtures in order to check cohesion, consistency and precise unit weights of each component for the mixtures of reference.

Based on the components of the reference mixtures **QUALITY ASSURANCE** processes the entire composition

mix-set (for cement dosages from 50 to 500 kg/m³ with a 10 kg/m³ pitch) and transfers it to the automation system (taking into account the moisture detected by the sensors). The previous mix-set is automatically archived. A second version of the mix-set, but for aggregates with average moisture, is intended for printing the paper mix-set to be stored in the plant.

QUALITY ASSURANCE then allows to store all strength test results and the relative deadlines for breaking specimens. Recording test results compared to data collection, allows **QUALITY ASSURANCE** to determine the main correlations (*strength / curing time, strength / dosage of cement, strength / water-cement ratio, strength / consistency, ...*) in tables which can be modified by the user. Then, through a statistical monitoring system chosen between cumulative sums, control charts for single values or moving average, mathematical or graphical method, **QUALITY ASSURANCE** controls - for each plant - the average strength and the average square deviation of each mixture or in case of applying the "family" method for concrete, the mixture of reference.

Finally, **QUALITY ASSURANCE** offers the user the update of the dosages for the different concrete grades and consistencies, always meeting the requirements of the selected exposure classes. Updated dosages, if confirmed by the user, are automatically transferred to the automation system to replace the previous ones.

QUALITY ASSURANCE, through the continuous collection and analysis of strength test data, allows to update the control parameters of product quality in real time. Moreover, the mix-sets no longer being used are always stored.

ED TOP MIX is a flexible and indispensable support tool for designers of mixtures who have the responsibility to maintain control over the continuous production of concrete.

The upgrade to the **Enterprise** version also allows a "multiple-company" management.

GENERAL CHARACTERISTICS:

- ◆ **QUALITY ASSURANCE** is an advanced system to design concrete mixtures with which Elettrondata wants to offer its customers a natural integration of their automated system.
- ◆ **QUALITY ASSURANCE** has been developed involving concrete technologists expert in quality control and in the management of laboratories and large production companies.
- ◆ **QUALITY ASSURANCE** allows the user to choose the level of detail required according to their specific needs.

QUALITY ASSURANCE is subdivided into the following main steps :

- ◆ Management and analysis of the archived materials
- ◆ Aggregates designation
- ◆ Study of the mix, set on single grading analyses or on the average of a series of grading analyses

- ◆ Choice of the reference curve
- ◆ Optimization of the relationship between granulometric classes
- ◆ Approximate composition of the mixture with the absolute volume method
- ◆ Execution of experimental mixtures
- ◆ Development of a composition mix-set (prescribed concrete)
- ◆ Mix-set interfacing with the automation system
- ◆ Tests and specimens management (cubes and / or cylinders)
- ◆ Statistical control of average strength and average square deviation
- ◆ Choice of the standard of reference for the durability parameters
- ◆ Mix set by performance (designed concrete)

DISTRIBUTOR