

QUALITY CONTROL IN HUMANITARIAN DEMINING – SAMPLING DURING MECHANICAL SOIL TREATMENT

I wish you all a warm welcome on behalf of QC department and I will shortly present you sampling procedures used during and after mechanical soil treatment in Croatia.

Quality Control in Humanitarian Demining consists of different activities with one basic goal, accomplishment of quality product, safe area for final users.

Humanitarian Demining, including QA and QC, in the Republic of Croatia is regulated by the Law, Rules and Regulations and completely and clearly defined SOPs (SOPs 04-01, 04-02 and 04-03).

Quality Assurance process is carried out through several phases, from accreditation to Quality Control during demining operations and final or post clearance QC.

Quality Control operations in Croatia are carried out by authorized CROMAC personnel, QC monitors and officers.

As you could see on Tuesday, at Cerovac test site, only certified and tested machines could be used in humanitarian demining in Croatia.

Mechanical demining is used in technical survey and demining operations.

In technical survey operations, demining machines are used in combination with manual method or MDDs if the machine did not reach project depth. In other case, if the machine did reach the project depth, the machines are used in combination with manual method on just one part of project area.

In demining operations, demining machines are used in combination with manual method and MDDs could be used as second method only if the machine did reach the project depth.

So, as you can see, working depth is very important.

Today, we are going to present one small part of procedures defined by SOP 04-02, Sampling during mechanical treatment of the soil. SOP is made on the basis of ISO 2859-1. The purpose of sampling is determination of the quality level of mechanically treated area and application of second method after the machine.

SOP defines:

- confidence level for demining machines (highest confidence level for heavy machines, smallest for light machines)
- determination of sample size and number of measurements in accordance with confidence level
- determination of a number of samples
- conditions for acceptance or non acceptance mechanically treated area
- average values and differences important for calculation of the measurement results
- samples could be taken only in lots what is done with one type of machine at a certain time

Sampling procedure following on next steps:

1. Definition of the lot for sampling
2. Determination of a size of the sample and number of measurements, in accordance with the size of the lot and confidence level
3. Determination of a number of samples
4. Manual detection in the sample
5. Choice of a method of movement in the sample, in accordance with the sample size
6. Measurement in the sample, with shovel and cross type ruler
7. Notification of measurements results
8. Calculation of the average value, acceptance or non acceptance of mechanically treated area

Sampling procedure is currently in process on mechanically treated areas.

Nowadays sampling procedures are adjusted to presentation conditions. The sample size is 10 sq meters; measurements positions are determinate in the sample.

Number of measurements is determined according to confidence level:

- three measurements for heavy machines
- four measurements for medium machines
- five measurements for light machines

Measurements could be done in any part of determined sq meter. The soil should be removed, dug out up to hard surface. Then we should proceed with measurement of the depth with ruler and notification of the results on prepared forms.

In this case average depth should be minimum 20 cm and neither one measurement should be below 12 cm. If the results are acceptable we can use MDDs as a second method after the machine in demining project or manual method in part of treated area in technical survey project.

When we finish with all measurements, the results will be available for everybody interested.

Thank you for your attention.