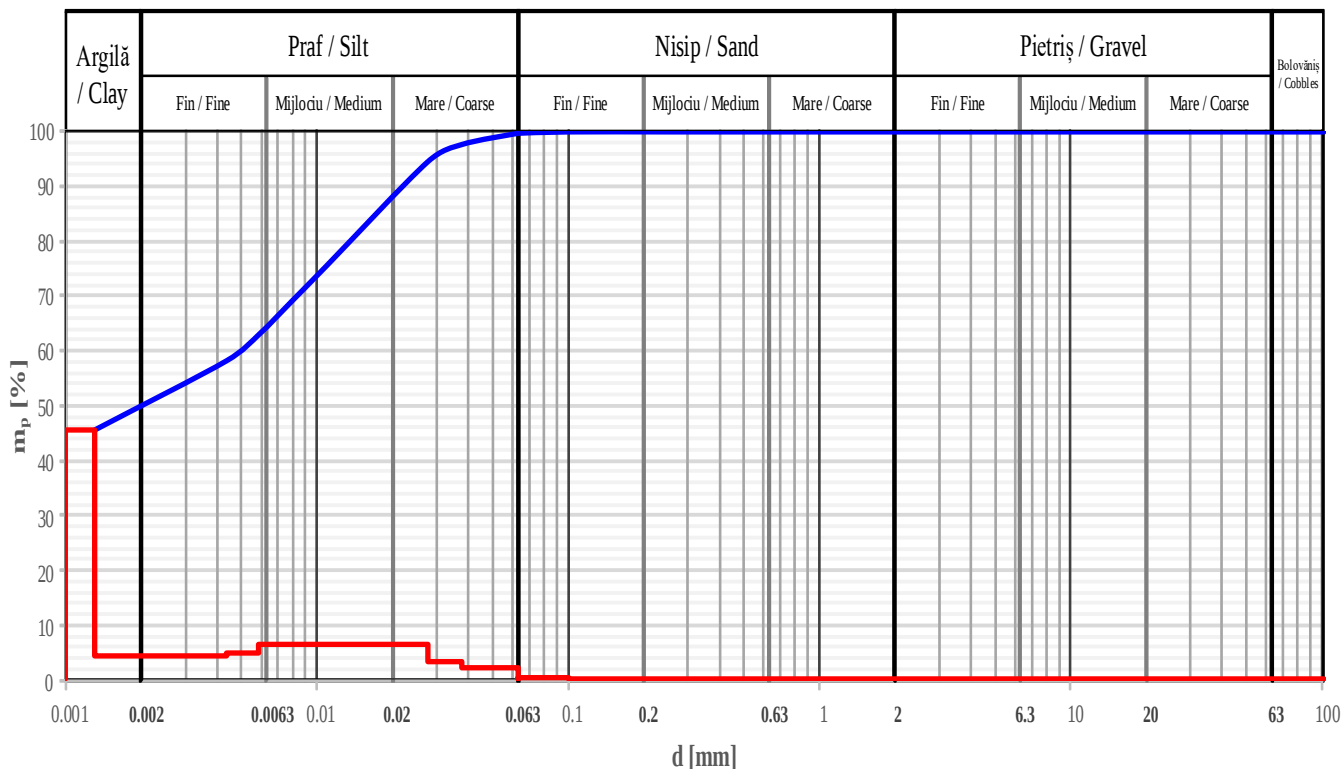


DCC-GEO-TEST CONSULT S.R.L.  
 LABORATOR DE ANALIZE ȘI ÎNCERCĂRI  
 ÎN CONSTRUCȚII - GRAD II  
 Autorizație nr. 2940 din 15.08.2014/24.08.2018

Amplasament / Location: Reabilitarea liniei de cale ferata Roman – Iasi - Frontiera  
 Forajul/Borehole: FTS 60 c  
 Proba/Sample: PT 2  
 Adancimea/Depth(m): 2,00

Raport de incercare nr. / Test report no.75 1200



Curba granulometrica / Granulometric curve

| Identificarea și clasificarea pământurilor SR EN ISO 14688/2-2018 / SR EN ISO 14688/2-2018 / STAS 1913/5-85 |                   |            |            |                |                         |             |            |              |             |            |                                     |
|-------------------------------------------------------------------------------------------------------------|-------------------|------------|------------|----------------|-------------------------|-------------|------------|--------------|-------------|------------|-------------------------------------|
| Argila / Clay (CI)                                                                                          |                   |            |            |                |                         |             |            |              |             |            |                                     |
| cenusie Un = #N/A                                                                                           |                   |            |            |                |                         |             |            |              |             |            |                                     |
| Conform SR EN ISO 14688/2-2005, la cerința beneficiarului                                                   | Pământ fin / Fine |            |            |                | Pământ grosier / Coarse |             |            |              |             |            | Pământ foarte grosier / Very coarse |
| Argila (CI)                                                                                                 | Praful (Si)       |            |            | Bolovanis (Co) | Nisip (Sa)              |             |            | Pietris (Gr) |             |            |                                     |
|                                                                                                             | Fin (fSi)         | Mediu (mS) | Mare (cSi) |                | Fin (fSa)               | Mediu (mSa) | Mare (cSa) | Fin (fGr)    | Mediu (mGr) | Mare (cGr) |                                     |
|                                                                                                             | 49                | 51         |            |                | 0                       |             |            | 0            |             |            |                                     |
|                                                                                                             | < 0,002           | < 0,0063   | < 0,02     |                | < 0,2                   | < 0,63      | < 2        | < 6,3        | < 20        | < 63       |                                     |
| %                                                                                                           | 49                | 15         | 24         | 12             | 0                       | 0           | 0          | 0            | 0           | 0          | 0                                   |

CLASIFICAREA PĂMÂNTURILOR /SR Pământ fin / Fine soil  
 EN ISO 14688/2-2018 / SR EN ISO 14688/2-2018 #N/A

Executat de / Performed by:  
 ing. Nina IOSIF

*Nina IOSIF*

Sef Laborator / Laboratory head: Constanta ANDREI

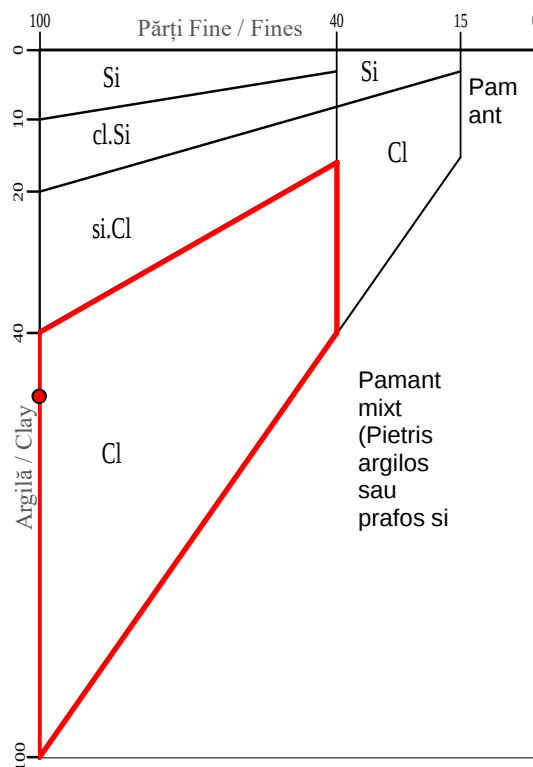
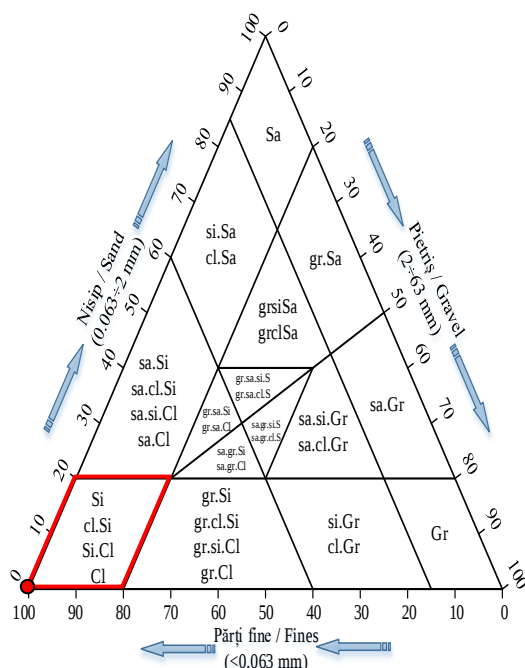


Data / Date: 13.01.2021

COD PROBA 75 1200

**Raport de incercare nr. / Test report no.75 1200**

|             | d (mm) | mp (%) |
|-------------|--------|--------|
| CERNERE     | 100    | 100,0  |
|             | 100    | 100,0  |
|             | 100    | 100,0  |
|             | 100    | 100,0  |
|             | 100    | 100,0  |
|             | 100    | 100,0  |
|             | 90     | 100,0  |
|             | 63     | 100,0  |
|             | 45     | 100,0  |
|             | 31,5   | 100,0  |
|             | 22,4   | 100,0  |
|             | 16     | 100,0  |
|             | 11,2   | 100,0  |
|             | 5,6    | 100,0  |
|             | 3,15   | 100,0  |
| SEDIMENTARE | 2      | 100,0  |
|             | 0,5    | 100,0  |
|             | 0,25   | 100,0  |
|             | 0,10   | 100,0  |
|             | 0,063  | 99,8   |
|             | 0,063  | 99,76  |
|             | 0,038  | 97,70  |
|             | 0,028  | 94,54  |
|             | 0,020  | 88,21  |
|             | 0,015  | 81,89  |
|             | 0,011  | 75,56  |
|             | 0,008  | 69,23  |
|             | 0,006  | 62,91  |
|             | 0,004  | 58,16  |
|             | 0,003  | 53,95  |
|             | 0,002  | 49,73  |
|             | 0,001  | 45,51  |



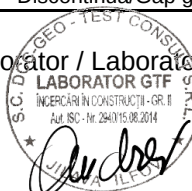
**Clasificarea pamantului dupa SR EN ISO 14688-1:2018 / SR EN ISO 14688-2:2018**

| Tip pamant / Soil group             | Tip fractiune |    | %  | C <sub>u</sub> (Un) | C <sub>c</sub> | Forma curbei granulometrice / Shape of grading curve | C <sub>u</sub> (Un) | C <sub>c</sub> |
|-------------------------------------|---------------|----|----|---------------------|----------------|------------------------------------------------------|---------------------|----------------|
| Pamant fin / Fine                   | Argila        | Cl | 49 | <3                  | < 1            | Foarte uniforma / Very uniform                       | #N/A                | #####          |
|                                     | Praf          | Si | 51 |                     |                |                                                      |                     |                |
| Pamant grosier / Coarse             | Nisip         | Sa | 0  | 3---6               | < 1            | Uniforma / Uniform                                   | #N/A                | #####          |
|                                     | Pietris       | Gr | 0  | 6---15              | < 1            | Uniformitate medie / Medium uniformity               |                     |                |
| Pamant foarte grosier / Very coarse | Bolovanis     | Co |    | >15                 | 1---3          | Neuniforma / Non-uniform                             | #N/A                | #####          |
|                                     |               |    |    | >15                 | <0,5           | Discontinua/Gap graded                               |                     |                |

Executat de / Performed by :  
 ing. Nina IOSIF

*Nina IOSIF*

Sef Laborator / Laboratory head: Constanta ANDREI



COD PROBA 75 1200

Raport de incercare nr. / Test report no.75 1201

**DETERMINAREA LIMITELOR DE PLASTICITATE /  
DETERMINATION OF ATTEBERG LIMITS  
STAS 1913/4-86**

| Nr. de caderi ale cupei (N)                 | 25 | UMIDITATE NATURALA<br>NATURAL MOISTURE<br>STAS 1913/1-82 |  |  | LIMITA DE CURGERE<br>LIQUID LIMIT<br>W <sub>L</sub> % |       |       |       | LIMITA DE FRAMANTARE<br>PLASTIC LIMIT<br>W <sub>P</sub> % |       |       |
|---------------------------------------------|----|----------------------------------------------------------|--|--|-------------------------------------------------------|-------|-------|-------|-----------------------------------------------------------|-------|-------|
| Adancimea de patrundere a<br>conului (S) mm | 10 |                                                          |  |  | Metoda cu cupa                                        |       |       |       |                                                           |       |       |
|                                             |    |                                                          |  |  | 44                                                    | 32    | 21    | 14    |                                                           |       |       |
| PROBA UMEDA + TARA A (gr)                   |    | 150,00                                                   |  |  | 26,68                                                 | 28,53 | 26,76 | 29,25 | 16,00                                                     | 16,19 | 16,80 |
| PROBA USCATA + TARA B (gr)                  |    | 117,18                                                   |  |  | 20,48                                                 | 21,87 | 20,56 | 22,24 | 15,25                                                     | 15,37 | 15,93 |
| TARA C (gr)                                 |    |                                                          |  |  | 10,34                                                 | 11,36 | 11,12 | 11,93 | 11,79                                                     | 11,68 | 11,96 |
| A - B                                       |    | 32,82                                                    |  |  | 6,21                                                  | 6,67  | 6,21  | 7,01  | 0,75                                                      | 0,82  | 0,87  |
| B - C                                       |    | 117,18                                                   |  |  | 10,14                                                 | 10,51 | 9,44  | 10,31 | 3,46                                                      | 3,69  | 3,97  |
| W(%) = (A-B)/(B-C)*100                      |    | 28,01                                                    |  |  | 61,22                                                 | 63,44 | 65,76 | 67,98 | 21,81                                                     | 22,36 | 22,03 |
| W(%) MEDIU                                  |    | 28,01                                                    |  |  | 64,92                                                 |       |       |       | 22,06                                                     |       |       |

DESCRIEREA PROBEI /  
DESCRIPTION OF THE SOIL:

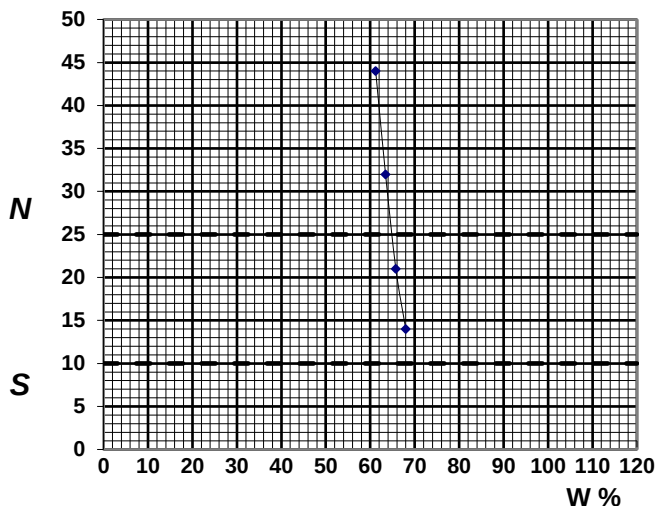
Argila cenusie plastic vartoasa / stiff  
consistency

SR EN ISO 14688/1/2-2018

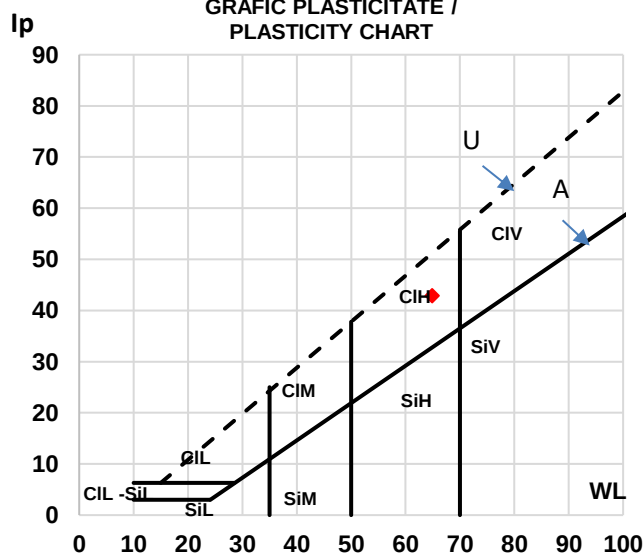
Pamant fin cu plasticitate mare / Fine soil, heigh plasticity

CIH

GRAFICUL LIMITEI SUPERIOARE DE PLASTICITATE  
UPPER LIMIT OF PLASTICITY CHART



GRAFIC PLASTICITATE /  
PLASTICITY CHART



|                                              |                                                            |       |   |  | SR EN ISO 14688/2-2018       |                              |                                     |
|----------------------------------------------|------------------------------------------------------------|-------|---|--|------------------------------|------------------------------|-------------------------------------|
| LIMITA DE FRAMANTARE /<br>PLASTIC LIMIT      | W <sub>P</sub> =                                           | 22,06 | % |  | Tip pamant /<br>Type of Soil | Plasticitate /<br>Plasticity | Limita de curgere /<br>Liquid limit |
| UMIDIT. NATUR. / NATURAL MOISTURE            | W =                                                        | 28,01 | % |  | Cl Clay                      | Low redusa                   | <35                                 |
| LIMITA DE CURGERE / LIQUID LIMIT             | W <sub>L</sub> =                                           | 64,92 | % |  | Si Silt                      | Medium medie                 | 35----50                            |
| INDICE DE PLASTICIT./PLASTICITY INDEX        | I <sub>P</sub> =W <sub>L</sub> -W <sub>P</sub>             | 42,85 | % |  |                              | Heigh mare                   | 50----70                            |
| INDICE DE CONSISTENȚĂ /<br>CONSISTENCY INDEX | I <sub>C</sub> = (W <sub>L</sub> -<br>W) / I <sub>P</sub>  | 0,86  |   |  |                              | Very foarte<br>heigh mare    | >70                                 |
| INDICE DE LICHIDITATE/<br>LIQUIDITY INDEX    | I <sub>L</sub> = (W -<br>W <sub>P</sub> ) / I <sub>P</sub> | 0,14  |   |  |                              | O organig                    |                                     |

Executat de / Performed by: Laborant Emilia Dumitru

Data / Date: 13.01.2021

COD PROBA 75

1201

Sef Laborator / Laboratory head: Constanta ANDREI