INSTITUTE FOR TESTING AND CERTIFICATION
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Division CSI - Centre of Civil Engineering

Notified Body No. 1023

SURVEILLANCE REPORT

No. 345200654 / 2022

Product: **Cement CEM IV/B(V) 32.5 R**
according to EN 197-1

Applicant: **WŁODAR TRADE WIESŁAW WŁODARCZYK SPÓŁKA JAWNA**
Ul. Gminna 42,
42-200 Częstochowa, Poland

Production unit: **Ul. Gminna 42, 42-200 Częstochowa, Poland**

Certificate No.: **1023 - CPR - 0669 P**

Assessed by: **Lubomír Martiník**

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NOTIFIED BODY 1023 INSTITUTE FOR TESTING AND CERTIFICATION 3

Mgr. Jiří Heš
Representative of the Notified Body No. 1023

Introduction

Cements as construction products are assessed on the basis of relevant clauses of the Construction Products Regulation (CPR) – Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC.

1. Product specification

One type of the cement has been applied for the certification:
Cement CEM IV/B (V) 32,5 R according to EN 197-1
The cement is manufactured in the production unit seated in Ul. Gminna 42, 42-200 Częstochowa, Poland.
The Notified Body 1023 – Institut pro testovani a certifikaci, a. s. Zlin, Czech Republic issued on 31st July 2015 the certificate 1023 - CPR - 0669 P confirming that the Factory Production Control (FPC) of above mentioned product fulfilled all provisions concerning the management and the attestation of FPC, as they are stated in the Annex ZA of the harmonized technical standard EN 197-1. The Initial assessment of factory production control is described in the Final report No.: 753501180 / 2015, issued on 31st July 2015. Last surveillance inspection No. 343509493/2021 was issued on 4th November 2021.

2. Assessment and Verification of Constancy of Performance (AVCP)

2.1 Harmonized technical specification and the AVCP system

For the AVCP of common cement the harmonized standard EN 197-1 Cement – Part 1: Composition, specifications and conformity criteria for common cements has been adopted.
For these products the AVCP system 1+ is laid down, which corresponds to Annex V, Section 1.1 of the CPR REGULATION (EU) No 305/2011. In this system, the initial type testing shall be performed and arranged by a manufacturer, in compliance with the Annex ZA of the above mentioned standard („Clauses of this European Standard addressing the provisions of the EU Construction Products Regulation").
If this system is prescribed, all the initial type testing assurance is an obligation of the Notified Body. The manufacturer shall carry out factory production control and further testing of samples taken at the factory in accordance with the prescribed test plan. Notified Body issues the certificate of constancy of performance of the product on the basis of determination of the product-type on the basis of type testing (including sampling), type calculation, tabulated values or descriptive documentation of the product; initial inspection of the manufacturing plant and of factory production control as well as its continuous surveillance, assessment and evaluation of factory production control and audit-testing of samples taken before placing the product on the market.
The attestation of conformity to the specifications in EN 197-1 is based on clause 9 of EN 197-1 and on evaluation of conformity, which shall be in accordance with EN 197-2.

One of the tasks, specified for a Notified Body in the described attestation of conformity system, is to evaluate results of audit samples testing – see EN 197-2, cl. 5.4, especially 5.4.5. Notified Body performs FPC – Factory production control every year, findings of the audit is also main part of the annual inspection report.

2.2 Essential characteristics of the product

The compliance of common cements properties with the essential requirements of the CPR is, in accordance with the corresponding the EN 197-1, assessed by evaluation of the following properties for **CEM IV/B (V) 32,5 R**:

1) Composition (see Table I in EN 197-1) according to CEN/TR 196-4:2007 "Methods of testing cement. Part 4: Quantitative determination of constituents"
2) Early compressive strength at 2 days according to EN 196-1 "Methods of testing cement - Part 1: Determination of strength";
3) Standard compressive strength (at 28 days) according to EN 196-1;
4) Initial setting time in accordance with EN 196-3;
5) Soundness according to EN 196-3;
6) Pozzolanicity according to EN 196-5
7) Sulphate content (as SO_3) in accordance with EN 196-2;
8) Chloride content according to EN 196-2;
9) Water-soluble hexavalent chromium (chromate) content according to EN 196-10

The property of water-soluble hexavalent chromium (chromate) content according to EN 196-10 "Methods of testing cement - Part 10: Determination of the water-soluble chromium (VI) content of cement" was not tested, because the limit of the content is monitored during production of certified Portland cement (the part of cement CEM IV/B (V) 32,5 R)
Note: The water-soluble hexavalent chromium content is not mentioned as an obligatory one in EN 197-1, however, in the clause ZA.1 the following statement can be found: "There may be requirements on dangerous substances applicable to the products falling within the scope of EN 197-1 (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the EU Construction Products Regulation, these requirements need also to be complied with, when and where they apply." The above mentioned statement was fulfilled with the Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, relating to restrictions on the marketing and use of certain dangerous substances and preparations), according to which: "(1) Cement and cement-containing preparations may not be used or placed on the market, if they contain, when hydrated, more than 0,0002 % soluble chromium VI of the total dry weight of the cement".

2.3 Place, time and way of sampling of the audit samples

The audit samples were taken in the manufacturer's site, WŁODAR TRADE WIESŁAW WŁODARCZYK SPÓŁKA JAWNA, Ul. Gminna 42, 42-200 Częstochowa, Poland on 30th August 2022 *CEM IV/B (V) 32,5 R.* Sampling was performed in accordance with EN 196-7, in the presence of the WŁODAR TRADE WIESŁAW WŁODARCZYK SPÓŁKA JAWNA, Ul. Gminna 42, 42-200 Częstochowa, Poland. representative, Mr. Wojciech Pacierpnik. Sampling No. 345200654 took place with Mr. Petr Karlík and Mr. Lubomir Martinik, Ph.D., Institut pro testování a certifikaci, a. s., Zlín (ITC) as the representative of NB 1023.

25 kg in one container was transported by car to ITC laboratory.

2.4 Place and date of the audit tests

The audit tests were performed on behalf of the Notified Body (NB) 1023 in the laboratory of ITC (Institute for testing and certification), Zlin, Czech Republic and VUSH Inc., chosen and verified by ITC - NB 1023. The samples taken on 30th August 2022 were tested in the following independent laboratories:

- Institut pro testování a certifikaci Inc. (ITC), accredited laboratory No. 1007.1, tř. T. Bati 299, 764 21, Zlín, Czech Republic ((September 2022) – tests 2 - 5)
- Výzkumný ústav stavebních hmot, Inc., Hněvkovského 30/65, 617 00, Brno, Czech Republic ((September – October 2022) – test 1 and 6 - 9)

2.5 Audit samples testing results

Test results are presented in the Table I and II.

Table I – tested properties 2-8

No.:	Aspect	Unit	Test result	Requirement	Evaluation
2	Early compressive strength at 2 days	MPa	16.3 ± 1.2	≥ 10.0	Conformity
	Flexural strength at 2 days	MPa	4.4 ± 0.3	-	-
3	Standard compressive strength (at 28 days)	MPa	47.6 ± 2.3	≥ 32.5 ≤ 52.5	Conformity
	Flexural strength at 28 days	MPa	8.8 ± 0.8	-	-
4	Initial setting time	h., min.	300 min ± 5 min	≥ 75 min.	Conformity
5	Soundness	mm	0.6 ± 0.1	≤ 10.0	Conformity
6	Pozzolanicity	-	Pass	Pass	Conformity
7	Sulphate content	% wt.	2.25 ± 0.05	≤ 3.5	Conformity
8	Chloride content	% wt.	0.046 ± 0.003	≤ 0.10	Conformity
8	Water-soluble hexavalent chromium	ppm	1.66	≤ 2.0	-

Table II - property 1 – Composition in percentages

Description/ component	R- setting time regulator	C -calcic component	P- Siliceous component	L - Slag	K - clinker
Results with setting time regulator (%)	3.60	2.84	34.12	2.62	56.82
Results without setting time regulator (%)	-	3.0	35.4	2.7	58.9
Requirement (%)	-	36 - 55		-	45 – 64*
Evaluation		Conformity			Conformity

**Tolerance for single result is ±2%.*

2.6 The assessment of products results

Notified Body 1023 found that the properties of the audit cement sample evaluated during the testing meets the requirements of the Construction Products Regulation as specified in the standard EN 197-1 "Cement – Part 1: Composition, specifications and conformity criteria for common cements".
The water-soluble hexavalent chromium content is monitored by producer of raw cement CEM I 42,5 R or CEM I 52,5 R that results are transmit to the producer of the certified cement CEM IV/B (V) 32,5 R. Nevertheless, with respect to the Council Directive 1907/2006/EC of the European Parliament of 18th December 2006 amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC relating to restrictions on the marketing and use of certain dangerous substances and preparations (see Note in the cl. 2.2), controlled closed and totally automated processes in which cement and cement-containing preparations are handled solely by machines and in which there is no possibility of contact with the skin must be used for dispatching of the cement.

3. Surveillance inspection of the factory production control (FPC)

3.1 Date and locality of the assessment

The assessment of FPC was performed on 30th August 2022 by the representatives of the NB 1023 in the new production site, WŁODAR TRADE WIESŁAW WŁODARCZYK SPÓŁKA JAWNA, Ul. Gminna 42, 42-200 Częstochowa, Poland.

On behalf of the manufacturer Mr. Wojciech Pacierpnik took part in the whole assessment procedure.

The representatives of the NB 1023 involved in the FPC assessment were:

- Petr Karlík, Institut pro testování a certifikaci, a. s., Zlin, Czech Republic,
- Lubomir Martinik, Institut pro testování a certifikaci, a. s., Zlin, Czech Republic

3.2 Scope of the assessment

A compliance of the following segments of the factory production control with the requirements of EN 197-1:2011 and EN 197-2 was audited:

- Organisation structure – Management representative
- Internal audits

- Management review
- Personnel involved in factory production control
- Employees' training
- Document control
- Corrective actions
- Management of non-conformities
- Cement constituents, their storage and usage for the production
- Process control
- Products transportation during the production
- Production equipment
- Production area
- Sampling
- Measuring and test equipment, test procedures and conditions, quality records, calibration, verification
- Autocontrol records
- Storage
- Packaging and delivery

3.3 Submitted documentation

During the assessment the following documentation of the factory production control was presented:

a) Quality Policy
b) Works' Quality Manual
c) Organization Structure and Responsibilities
d) Internal Audits Plan and Records
e) Flow Chart of the Process
f) Production procedures
g) Quality Plans
h) Sampling Procedures
i) List of Measuring and Test Equipment
j) Quality Records (Reports and Books)
k) Calibration Manuals and Records
l) Autocontrol Records
m) Purchase Specifications
n) Corrective Actions Forms
o) Safety Data Sheet
p) Personnel Training Sheets
q) Records concerning the Assessment of Suppliers

Most of the documentation was written in the Polish language.

3.4 Findings

In the process of the assessment the following findings were detected:

- The Work's Quality Manual is constituted as an integrated document for Quality Management System, Environmental Management System and Occupational Health and Safety Management System.
- Quality Manual from 1. 9. 2021 is still valid (last change 4.4.2022 – change of forms used for production only.
- The management quality representative is the Quality Control and Management Manager, Mr. Wojciech Pacierpnik. His authority and duties in activities connected with a quality management during cements production are sufficiently described in related documents.
- Training records were checked up – a plan of training is put together for every year, including list of topics, tutors, concerned employees, time schedule and supposed dates (a month). Records about realized trainings are retained and stored in a special training department and also in the department, where a trained member is employed. Special stress is laid on newly engaged workers. Mr. Wojciech Pacierpnik was trained in ITB during the January 2018. Last training for the usage of various types of cement was performed on 12. 10. 2020
- Document control – the Quality Control and Management Manager is a responsible person for Quality. Documentation is accessible in an electronic form just by responsible, predetermined intranet participants. In case of a document change these persons are automatically given a notice via e-mail.
- During the inspection, a flowchart of the process with the designation of relations among individual processes and sampling points was presented.
- The equipment used for the cement manufacture is suitable for continuous mass production of cement. The process control is performed automatically.
- There are specifications for purchasing in a sufficient range. A suppliers' assessment is made regularly, in a prescribed manner, in a detailed way – last 6. 6. 2022
- The final product consists of Portland cement and fly ash.
- The Portland cement CEM I 42,5 R was certified by INSTYTUT CERAMIKI I MATERIALOW BUDOWLANYCH, No. 1487-CPR-027-02 and CEM I 52,5 R, No. 1487-CPR-027-03. The producer of the cement is Góraždže Cement S.A, Chorula, ul. Cementova 1, OPOLE. Now, producer uses CEM I 42,5 R from GRUPA OŽARÓW, the certificate No. 1487-CPR-028-02. Currently the CEM I 52,5 R from Goraźdźe is used for production.
- The fly ash was certified by NB 1488, No. 1488-CPR-0095/W. The holder of the certificate is STEAG ENERGO MINERAL Sp. z o.o., ul. Piastowska 3, Opole and the producer is PKE S.A. Elektrownia Łaziska. Second supplier of the fly ash is EKOBET CEMENTY Sp. z o.o., certified by NB 1488, No. 1488-CPR-0501/W and the producer is TAURON Wytwarzanie S.A. Elektrownia Jaworzno. Third supplier of the fly ash is EPORE Sp. Z.o.o. certified by NB 1488, No. 1488-CPR-0755/W and the producer is Elektrownia Opole. Currenty used the fly ash from Jaworzno 3, certificate no. 1488-CPR-0662/W.
- Every component (cement, fly ash) for production process is stored in an individual silo. They are properly marked with a name and type.

- The production place consists of mixing centre, silos of raw material and storage area. The main components – cement and fly ash are mixed with prescribed ratio and immediately bagged.
- The production is not continuous. Therefore the frequency of testing was decreased to twice per year in depending on all days of production of cement. Statistical evaluation was decreased to once per year.
- Internal audits are carried out according to the plan (August). Last internal audit was carried out on 1. 8. 2022 in KOMBUD and management review was performed on 2. 8. 2021
- All components are dosed automatically and weighted with calibrated equipment (calibration 7/2022). The scales are now verified twice a year to avoid possible discrepancies. Manufacturer also verify the colour of the product to quickly identify any non-conformity of the product.
- A management of eventual non-conforming products is ready for use and described in sufficient details.
- Principles of the function in the event of a necessity to adopt a corrective action within the whole process are accepted. According to the statement of the manufacturer's representative there are two clients complaints for the quality of the cement type. The workers in the production control department are well acquainted with a procedure included in the Quality Manual.
- The procedure of complaints solution is described very well. There are single records F-14 Rejestr reklamacji; F-15 Karta reklamacji; F-16 Karta wyrobu/surowca niezgodnego and F-17 Rejestr działań korygujacych i zapobiegawczych.
- During the last year there were no client's complaint.
- Sampling is performed in predetermined frequencies and in sampling points identified in advance in the regulations.
- Control, measuring and test equipment is available in sufficient range and on a proper level. There is a list of the equipment used for these purposes (weights and laboratory equipment in KOMBUD).
- Calibration is performed according to the plan; a list of equipment liable to an obligatory calibration with the last and the subsequent date is kept. The equipment is comprehensively labeled with designating of a date of the last calibration and a date of the next one. Unsatisfactory or damaged equipment is identified in a suitable manner. Last calibration of weighing equipment in company was carried out during the July 2022, laboratory equipment during March, June, August 2022, instron July 2022.
- Calibration of the KOMBUD equipment was carried out according to the plan.
- Internal training in KOMBUD laboratory was on 28th August 2019. Internal training in production 22. 8. 2022.
- Tests are performed in compliance with a testing plan; results are recorded to registration sheets (books) in a well-arranged way and in a sufficient extent. Quality records are, in accordance with the relevant provision of the Quality Manual, keeping for a prescribed period – minimum 10 years.
- Cements could be dispatched in bags. During bags filling a mass of every one of them is checked, with a help of the calibrated weighing equipment.
- There are means for securing that no cement without properties validated in a prescribed manner is dispatched. A sample of every lot is archived for 3 months because of an event of necessity to solve discrepancies with a client. As long as a complaint is recognized, all the amount of dispatched cement is exchanged for new cement.
- Archiving time is 10 years.

3.4.1 Major system non-conformities
Missing

3.4.2 Small non-conformities (to be removed in the start of the production)
Missing

3.4.3 Improvement opportunities
NB 1023 recommends producer to write all results of mechanical-physical and chemical properties to one table easily (first column of numbering samples and others all relevant results) for statistical evaluation, because producer results data have been disarranged.

3.5. Conclusion from the initial inspection of FPC
It was confirmed that the factory production control was efficient and that it met all the relevant requirements of the standards EN 197-1 and EN 197-2.

4. Information about a scope of the surveillance and of the audit tests performed with randomly taken samples

The cement will undergo annual surveillance and audit samples tests in accordance with following scheme:

- Twice times per twelve months audit sampling and consecutive tests in the same scope as during the initial type testing (with the exclusion of the composition) – see cl. 2.5. of the present Annual Inspection Report.
- Once per year an inspection made by NB 1023 in the factory including surveillance and assessment of the FPC operated by the manufacturer.
- Once a year NB 1023 shall conduct a statistical evaluation of the auto-control testing results of samples.

5. Conclusions
Notified Body 1023 found that the properties of the audit cement sample evaluated during the audit testing met the requirements of the Construction Products Regulation, specified in EN 197-1, Annex ZA.
It was confirmed, that the factory production control was efficient and met all the relevant requirements of the standards EN 197, Part 1 and 2.

Notified Body 1023 declares that the issued certificate No. 1023 - CPR - 0669 P remains valid.

6. List of the documents used for Final Report elaborating

- EN 197-1 "Cement – Part 1: Composition, specifications and conformity criteria for common cements"
- EN 197-2 „Cement – Part 2: Conformity evaluation"
- CEN/TR 196-4:2007 "Methods of testing cement. Part 4: Quantitative determination of constituents"
- EN 196-1 "Methods of testing cement - Part 1: Determination of strength";
- EN 196-3 "Methods of testing cement - Part 3: Determination of setting time and soundness";
- EN 196-7 "Methods of testing cement; Methods of taking and preparing samples of cement"
- EN 196-2 "Methods of testing cement – Part 2: Chemical analysis of cement"
- EN 196-5 Methods of testing cement – Part 5: Pozzolanicity test for pozzolanic cement
- Sampling report No: 345200654 on 30th August 2022
- Checklist from inspection, NB 1023, 30th August 2022
- Autocontrol records, Częstochowa,
- Auto-control results evaluation report No. 345200654/S/2022, issued by ITC, NB 1023 on 20th September 2022
- Test report, reference No. 345200654-01, issued by ITC (Institute for Testing and Certification), a.s. in Zlín, Czech Republic, on 29th September 2022
- Test Report No. 139/2022 issued by VÚSH (Výzkumný ústav stavebních hmot – Building Materials Research Institute) a.s. in Brno, Czech Republic, on 11th October 2022
- Construction Products Regulation (CPR) - REGULATION (EU) No 305/2011 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC
- COMMISSION DELEGATED REGULATION (EU) No 568/2014 of 18 February 2014 amending Annex V to Regulation (EU) No 305/2011 of the European Parliament and of the Council as regards the assessment and verification of constancy of performance of construction products