

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                                                                                     |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------|--|
| AENOR<br>CTC-015 "Cementos"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | CERTIFICADO DE EVALUACIÓN<br>ESTADÍSTICA DE LA PRODUCCIÓN                           |  |
| Empresa: HEIDELBERG MATERIALS HISPANIA CEMENTOS S.A.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |  |
| Fabrica: ARRIGORRIAGA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                                                     |  |
| CEMENTO: CEM II/C-M (V-L) 32,5 R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | UNE-EN 197-5:2021                                                                   |  |
| Periodo estudiado: 04/2024 - 03/2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  | Certificado AENOR: 015/002241                                                       |  |
| Este producto está certificado con la marca AENOR  para cementos. La Marca  es un distintivo de calidad de carácter voluntario acreditado por ENAC, según UNE-EN ISO/IEC 17065, que cumple con las exigencias recogidas en la Instrucción para la recepción de cementos en vigor. La evaluación estadística que se muestra a continuación corresponde a los resultados obtenidos en el periodo de estudio considerado. |  |                                                                                     |  |

CARACTERÍSTICAS DEL CEMENTO

|                                                                      |          |        |         |        |          |      |            |
|----------------------------------------------------------------------|----------|--------|---------|--------|----------|------|------------|
| <b>ÍNDICE DE CONTRIBUCIÓN DEL PROCESO A LA SOSTENIBILIDAD (ICPS)</b> |          |        |         |        |          |      | 95         |
| <b>ÍNDICE DE CONTENIDO DE RECICLADO (IR) (%)</b>                     |          |        |         |        |          |      | 27         |
| <b>Índice de contenido de reciclado preconsumo (%)</b>               |          |        |         |        |          |      | 26,19      |
| <b>Índice de contenido de reciclado postconsumo (%)</b>              |          |        |         |        |          |      | 0,81       |
| <b>Composición Nominal declarada por el fabricante(%):</b>           |          |        |         |        |          |      |            |
| Clinker                                                              | Puzolana | Ceniza | Escoria | Caliza | Esquisto | Humo | Comp. Min. |
| 54                                                                   |          | 28     |         | 18     |          |      |            |

CONTROL POR VARIABLES

Control de producción

Nº de muestras: 102

Especificación  
Nº ensayos  
Valor medio  
Desviación típica  
V. característico inf.  
V. característico sup.

| Resistencias (MPa) |             | Fraguados (min.) |       |
|--------------------|-------------|------------------|-------|
| a 2 días           | a 28 días   | I.F.             | F.F.  |
| ≥ 13,5             | 32,5< >52,5 | ≥ 75             | ≤ 720 |
| 102                | 102         | 102              | 102   |
| 17,5               | 38,7        | 223              | 280   |
| 1,68               | 1,7         | 25               | 31    |
| 14,3               | 35,4        | 185              | 233   |
| 20,1               | 41,3        | 261              | 327   |

Especificación  
Nº ensayos  
Valor medio  
Desviación típica  
V. absoluto inferior  
V. absoluto superior

Riesgo del consumidor < 3,25 %

Muestras de contraste

Nº de muestras: 12

| Resistencias (MPa) |             | Fraguados (min.) |       |
|--------------------|-------------|------------------|-------|
| a 2 días           | a 28 días   | I.F.             | F.F.  |
| ≥ 13,5             | 32,5< >52,5 | ≥ 75             | ≤ 720 |
| 12                 | 12          | 12               | 12    |
| 16,7               | 38,7        | 226              | 300   |
| 1,07               | 1,79        | 41               | 33    |
| 14,98              | 35,4        | 170              | 260   |
| 18,7               | 41,18       | 300              | 360   |

CONTROL POR ATRIBUTOS (características físicas y químicas):

Control de producción

Nº de muestras: 102

Especificación  
Nº de ensayos  
Valor medio  
Nº defectos  
Nºdefectos admitidos

| P.F. (%) | R.I. (%) | CL- (%) | SO3 (%) | EXP (mm) |
|----------|----------|---------|---------|----------|
|          |          | ≤ 0,1   | ≤ 4     | ≤ 10     |
|          |          | 102     | 102     | 102      |
|          |          | 0,03    | 2,88    | 0,1      |
|          |          | 0       | 0       | 0        |
|          |          | 5       | 5       | 5        |

Muestras de contraste

Nº de muestras: 12

Especificación  
Nº de ensayos  
Valor medio  
Nº defectos  
Nºdefectos admitidos

| P.F. (%) | R.I. (%) | CL- (%) | SO3 (%) | EXP (mm) |
|----------|----------|---------|---------|----------|
|          |          | ≤ 0,1   | ≤ 4     | ≤ 10     |
|          |          | 12      | 12      | 12       |
|          |          | 0,03    | 2,28    | 0,5      |
|          |          | 0       | 0       | 0        |
|          |          | 0       | 0       | 0        |

Característica complementaria de Cr(VI) soluble en agua certificada según la norma UNE-EN 196-10 de acuerdo a lo establecido en el Reglamento (CE) nº 1907/2006, entrada 47. El contenido de Cr(VI) soluble en agua es conforme con el límite máximo de 0,0002% .En caso de usar agente reductor de Cr (VI) el cumplimiento de este requisito se ha evaluado al final de periodo de eficacia de dicho agente declarado por el fabricante.



Este informe tiene validez hasta el 1 de octubre de 2025

Fdo: MIGUEL ANGEL MORALES RECIO  
Fecha: 01/07/2025



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                             |                                                               |                                                                                     |            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------|------------|
| AENOR<br>CTC-015 "Cements"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                             | CERTIFICATE OF STATISTICAL ASSESSMENT OF CEMENT<br>PRODUCTION |                                                                                     |            |
| Company:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | HEIDELBERG MATERIALS HISPANIA CEMENTOS S.A. |                                                               |                                                                                     |            |
| Cement Plant:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ARRIGORRIAGA                                |                                                               |                                                                                     |            |
| CEMENT:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | CEM II/C-M (V-L) 32,5 R                     | UNE-EN 197-5:2021                                             |  |            |
| Evaluated period:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 04/2024 - 03/2025                           | AENOR Certificate:                                            |                                                                                     | 015/002241 |
| This product holds the  ENOR marking. The  mark is a voluntary quality mark accredited by ENAC, according to UNE-EN ISO/IEC 17065, which complies with the requirements contained in the current Instruction for the reception of cements. This statistical assessment shows the outcomes within the evaluated period as summarized below: |                                             |                                                               |                                                                                     |            |

CHARACTERISTICS OF CEMENT

|                                                            |           |         |                    |           |             |             |                    |
|------------------------------------------------------------|-----------|---------|--------------------|-----------|-------------|-------------|--------------------|
| <b>PROCESS CONTRIBUTION TO SUSTAINABILITY INDEX (ICPS)</b> |           |         |                    |           |             |             | 95                 |
| <b>RECYCLING INDEX (IR) (%)</b>                            |           |         |                    |           |             |             | 27                 |
| <b>Pre-consumer recycled content (%)</b>                   |           |         |                    |           |             |             | 26,19              |
| <b>Post-consumer recycling content (%)</b>                 |           |         |                    |           |             |             | 0,81               |
| <b>Nominal composition (declared by the producer) (%):</b> |           |         |                    |           |             |             |                    |
| Clinker                                                    | Pozzolana | Fly ash | Blast furnace slag | Limestone | Burnt shale | Silica fume | Other constituents |
| 54                                                         |           | 28      |                    | 18        |             |             |                    |

INSPECTION BY VARIABLES

Autocontrol samples

Number of samples 102

|                            |                |               |                     |       |                      |
|----------------------------|----------------|---------------|---------------------|-------|----------------------|
|                            | Strength (MPa) |               | Setting time (min.) |       |                      |
|                            | a 2 días       | a 28 días     | Initial             | Final |                      |
| Specification              | ≥ 13,5         | 32,5 < > 52,5 | ≥ 75                | ≤ 720 | Specification        |
| Number of tests            | 102            | 102           | 102                 | 102   | Number of tests      |
| Average value              | 17,5           | 38,7          | 223                 | 280   | Average value        |
| Standard deviation         | 1,68           | 1,7           | 25                  | 31    | Standard deviation   |
| Lower characteristic value | 14,3           | 35,4          | 185                 | 233   | Lower absolute value |
| Upper characteristic value | 20,1           | 41,3          | 261                 | 327   | Upper absolute value |

Consumer´s risk < 3,25 %

Audit samples

Number of samples 12

|                            |                |               |                     |       |                      |
|----------------------------|----------------|---------------|---------------------|-------|----------------------|
|                            | Strength (MPa) |               | Setting time (min.) |       |                      |
|                            | a 2 días       | a 28 días     | Initial             | Final |                      |
| Specification              | ≥ 13,5         | 32,5 < > 52,5 | ≥ 75                | ≤ 720 | Specification        |
| Number of tests            | 12             | 12            | 12                  | 12    | Number of tests      |
| Average value              | 16,7           | 38,7          | 226                 | 300   | Average value        |
| Standard deviation         | 1,07           | 1,79          | 41                  | 33    | Standard deviation   |
| Lower characteristic value | 14,98          | 35,4          | 170                 | 260   | Lower absolute value |
| Upper characteristic value | 18,7           | 41,18         | 300                 | 360   | Upper absolute value |

INSPECTION BY ATTRIBUTES (Physical and chemical characteristics):

Autocontrol samples

Number of samples 102

|                         |                      |                       |              |         |                |
|-------------------------|----------------------|-----------------------|--------------|---------|----------------|
|                         | Loss on Ignition (%) | Insoluble residue (%) | Chloride (%) | SO3 (%) | Soundness (mm) |
| Specification           |                      |                       | ≤ 0,1        | ≤ 4     | ≤ 10           |
| Number of tests         |                      |                       | 102          | 102     | 102            |
| Average value           |                      |                       | 0,03         | 2,88    | 0,1            |
| Nº of defaults          |                      |                       | 0            | 0       | 0              |
| Nº of defaults admitted |                      |                       | 5            | 5       | 5              |

Audit samples

Number of samples 12

|                         |                      |                       |              |         |                |
|-------------------------|----------------------|-----------------------|--------------|---------|----------------|
|                         | Loss on Ignition (%) | Insoluble residue (%) | Chloride (%) | SO3 (%) | Soundness (mm) |
| Specification           |                      |                       | ≤ 0,1        | ≤ 4     | ≤ 10           |
| Number of tests         |                      |                       | 12           | 12      | 12             |
| Average value           |                      |                       | 0,03         | 2,28    | 0,5            |
| Nº of defaults          |                      |                       | 0            | 0       | 0              |
| Nº of defaults admitted |                      |                       | 0            | 0       | 0              |

Complementary characteristic of water-soluble Cr(VI) is certified according to UNE EN 196-10 in accordance with the provisions of Regulation (EC) No. 1907/2006, entry 47. The water-soluble Cr(VI) content complies the limit of 0,0002%. Whether Cr(VI) reducing agent is being used, the compliance of this requirement is assessed at the end of its own shelf life period for such agent as declared by the manufacturer.

