



Opinion Statement

Product Carbon Footprint Verification Opinion Statement

This is to verify that: TCC Group Holdings Co., Ltd.
Cement plant
No. 310, Sec. 1, Datong Rd.
Xizhi Dist.
New Taipei City
221006
Taiwan

臺灣水泥股份有限公司
水泥製品廠
臺灣
新北市
汐止區
大同路一段 310 號
221006

Holds Statement No: PCFV 817875

As a result of carrying out the verification and validation procedures in accordance with ISO 14064-3:2019 of product life cycle greenhouse gas emissions, the statement for mixed engagement including reasonable assurance for verification activity and agreed-upon procedures (AUP) contains the following:

- The product carbon footprint with the declared unit of one cubic meter series Portland limestone cement ready-mixed concrete is verified as following pages.
- The product life cycle GHG data quality was verified to be acceptable against the requirements of ISO 14067:2018.

This opinion statement shall be valid for a maximum period of two years after the latest issue date on this certificate. Should there be a change in the life cycle of the product whose GHG emissions are being assessed, the validity of this opinion statement will cease.

For and on behalf of BSI:

Managing Director BSI Taiwan, Peter Pu

Originally Registration Date: 2025-02-04

Effective Date: 2025-02-04

Latest Revision Date: 2025-02-04

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Taiwan Headquarters: 2nd Floor, No. 37, Ji-Hu Rd., Nei-Hu Dist., Taipei 114, Taiwan, R.O.C.
BSI Taiwan is a subsidiary of British Standards Institution.

Location	Verification Information
TCC Group Holdings Co., Ltd. Taipei Cement Products Plant No. 310, Sec. 1, Datong Rd., Xizhi Dist. New Taipei City 221006, Taiwan 臺灣水泥股份有限公司 台北水泥製品廠 臺灣新北市汐止區大同路一段 310 號	The product carbon footprint with the declared unit of one cubic meter series Portland limestone cement ready-mixed concrete is verified as following table.

Verification

- Verification activities are based on reasonable level of assurance and include the following greenhouse gas emissions.
 - the stationary combustion, mobile combustion and fugitive emissions in production stage of product life cycle
 - purchased electricity and water resource in production stage of life cycle
 - disposal and treatment of waste generated in operations
 - partial production-related raw materials acquisition (Portland limestone cement)
- The data and information of greenhouse gas emissions are based on historical in nature, and no material misstatements in this product life cycle greenhouse gas emission statement were revealed.

Agreed upon procedures (AUP)

- AUP are specific types of verification activities, BSI have performed the evidence-gathering procedures and enumerated below with respect to the upstream and downstream GHGs emissions information.
 - all production-related raw materials acquisition and transportation (except Portland limestone cement)
 - transportation of waste generated in operations
- BSI do not express any assurance on the GHG emissions, removals and storage.

(Unit: Kg CO₂e)

Product Name	Compressive Strength (psi)	Emissions for Each Engagement Types		Total Emissions
		Agreed-upon Procedures (AUP)	Verification	
One cubic meter Portland limestone cement ready-mixed concrete (Minimum usage of cement in cementitious materials & 50% cement replacement materials) 每立方公尺石灰石水泥預拌混凝土(優化配比 50%水泥)	2000	47.990	89.348	137.34
	2500	48.356	97.125	145.48
	3000	50.471	115.406	165.88
	4000	51.858	140.321	192.18
	5000	55.786	164.383	220.17
	6000	57.252	182.415	239.67

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Location	Verification Information
TCC Group Holdings Co., Ltd. Taipei Cement Products Plant Taoyuan Branch No. 220, Sec. 2, Nanshan Rd., Luzhu Dist. Taoyuan City 338020, Taiwan 臺灣水泥股份有限公司 台北水泥製品廠桃園分廠 臺灣桃園市蘆竹區南山路二段 220 號	The product carbon footprint with the declared unit of one cubic meter series Portland limestone cement ready-mixed concrete is verified as following table.

The conclusions for different engagement types are explained as follows:

Verification

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(Unit: Kg CO₂e)

Product Name	Compressive Strength (psi)	Emissions for Each Engagement Types		Total Emissions
		Agreed-upon Procedures (AUP)	Verification	
One cubic meter Portland limestone cement ready-mixed concrete (Minimum usage of cement in cementitious materials & 50% cement replacement materials) 每立方公尺石灰石水泥預拌混凝土(優化配比 50%水泥)	2000	24.731	92.030	116.76
	2500	25.802	101.818	127.62
	3000	28.547	124.356	152.90
	4000	31.698	146.529	178.23
	5000	34.812	169.679	204.49
	6000	37.968	200.973	238.94

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Location	Verification Information
TCC Group Holdings Co., Ltd. Taipei Cement Products Plant Zhongli Branch No. 203, Sec. 6, Minzu Rd., Xinwu Dist. Taoyuan City 327001, Taiwan 臺灣水泥股份有限公司 台北水泥製品廠中壢分廠 臺灣桃園市新屋區民族路六段 203 號	The product carbon footprint with the declared unit of one cubic meter series Portland limestone cement ready-mixed concrete is verified as following table.

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One cubic meter Portland limestone cement ready-mixed concrete (Minimum usage of cement in cementitious materials & 50% cement replacement materials) 每立方公尺石灰石水泥預拌混凝土(優化配比 50%水泥)	2000	34.658	93.067	127.72
	2500	35.321	102.878	138.20
	3000	38.664	127.893	166.56
	4000	41.127	145.993	187.12
	5000	41.942	157.841	199.78
	6000	45.293	185.012	230.31

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(Unit: Kg CO₂e)

Product Name	Compressive Strength (psi)	Emissions for Each Engagement Types		Total Emissions
		Agreed-upon Procedures (AUP)	Verification	
One cubic meter Portland limestone cement ready-mixed concrete (Minimum usage of cement in cementitious materials & 50% cement replacement materials) 每立方公尺石灰石水泥預拌混凝土(優化配比 50%水泥)	2000	53.872	94.296	148.17
	2500	54.614	105.621	160.24
	3000	55.706	118.456	174.16
	4000	57.737	143.686	201.42
	5000	59.992	171.117	231.11
	6000	61.829	193.389	255.22

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Location	Verification Information
TCC Group Holdings Co., Ltd. Taipei Cement Products Plant Bade Branch No. 32-1, Zhongxiao Ln., Changxing Rd. Bade Dist., Taoyuan City 334014, Taiwan 臺灣水泥股份有限公司 台北水泥製品廠八德分廠 臺灣桃園市八德區長興路忠孝巷 32-1 號	The product carbon footprint with the declared unit of one cubic meter series Portland limestone cement ready-mixed concrete is verified as following table.

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(Unit: Kg CO ₂ e)				
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One cubic meter Portland limestone cement ready-mixed concrete (Minimum usage of cement in cementitious materials & 50% cement replacement materials) 每立方公尺石灰石水泥預拌混凝土(優化配比 50%水泥)	2000	23.341	92.177	115.52
	2500	31.040	130.000	161.04
	3000	27.627	123.232	150.86
	4000	30.347	143.782	174.13
	5000	34.421	170.674	205.09
	6000	35.720	185.636	221.36

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Location	Verification Information
TCC Group Holdings Co., Ltd. Taipei Cement Products Plant Guishan Branch No. 688, Dongwanshou Rd., Guishan Dist. Taoyuan City 333031, Taiwan 臺灣水泥股份有限公司 台北水泥製品廠龜山分廠 臺灣桃園市龜山區龍壽里東萬壽路 688 號	The product carbon footprint with the declared unit of one cubic meter series Portland limestone cement ready-mixed concrete is verified as following table.

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(Unit: Kg CO₂e)

Product Name	Compressive Strength (psi)	Emissions for Each Engagement Types		Total Emissions
		Agreed-upon Procedures (AUP)	Verification	
One cubic meter Portland limestone cement ready-mixed concrete (Minimum usage of cement in cementitious materials & 50% cement replacement materials) 每立方公尺石灰石水泥預拌混凝土(優化配比 50%水泥)	2000	27.827	92.104	119.93
	2500	28.970	101.917	130.89
	3000	32.144	126.760	158.90
	4000	34.756	144.438	179.19
	5000	37.566	169.074	206.64
	6000	41.379	196.279	237.66

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Location	Verification Information
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(Unit: Kg CO₂e)

Product Name	Compressive Strength (psi)	Emissions for Each Engagement Types		Total Emissions
		Agreed-upon Procedures (AUP)	Verification	
One cubic meter Portland limestone cement ready-mixed concrete (Minimum usage of cement in cementitious materials & 50% cement replacement materials) 每立方公尺石灰石水泥預拌混凝土(優化配比 50%水泥)	2000	26.793	93.990	120.78
	2500	27.674	102.265	129.94
	3000	29.112	123.132	152.24
	4000	31.457	135.402	166.86
	5000	34.060	160.941	195.00
	6000	36.698	185.766	222.46

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Location	Verification Information
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	2500	25.930	104.194	130.12
	3000	26.877	111.990	138.87
	4000	30.863	145.951	176.81
	5000	34.164	164.706	198.87
	6000	37.919	194.849	232.77

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	2500	25.534	102.137	127.67
	3000	28.856	128.510	157.37
	4000	31.979	152.949	184.93
	5000	34.272	162.769	197.04
	6000	34.945	177.597	212.54

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Product Name	Compressive Strength (psi)	Emissions for Each Engagement Types		Total Emissions
		Agreed-upon Procedures (AUP)	Verification	
One cubic meter Portland limestone cement ready-mixed concrete (Minimum usage of cement in cementitious materials & 50% cement replacement materials) 每立方公尺石灰石水泥預拌混凝土(優化配比 50%水泥)	2000	22.619	89.850	112.47
	2500	23.633	99.569	123.20
	3000	25.156	116.066	141.22
	4000	29.315	140.284	169.60
	5000	30.729	168.880	199.61
	6000	31.625	174.796	206.42

Originally Registration Date: 2025-02-04

Effective Date: 2025-02-04

Latest Revision Date: 2025-02-04

Expiry Date: 2027-02-03

The British Standards Institution is independent to the above named client and has no financial interest in the above named client. This Opinion Statement has been prepared for the above named client only for the purposes of verifying its statements relating to its carbon emissions more particularly described in the scope. It was not prepared for any other purpose. The British Standards Institution will not, in providing this Opinion Statement, accept or assume responsibility (legal or otherwise) or accept liability for or in connection with any other purpose for which it may be used or to any person by whom the Opinion Statement may be read. This Opinion Statement is prepared on the basis of review by The British Standards Institution of information presented to it by the above named client. The review does not extend beyond such information and is solely based on it. In performing such review, The British Standards Institution has assumed that all such information is complete and accurate. Any queries that may arise by virtue of this Opinion Statement or matters relating to it should be addressed to the above name client only.
Taiwan Headquarters: 2nd Floor, No. 37, Ji-Hu Rd., Nei-Hu Dist., Taipei 114, Taiwan, R.O.C.
BSI Taiwan is a subsidiary of British Standards Institution.

Location	Verification Information
TCC Group Holdings Co., Ltd. Hualien Factory No. 3, Meigong 5th St., Hualien City Hualien County 970024 , Taiwan 臺灣水泥股份有限公司花蓮工場 臺灣花蓮市民孝里美工五街 3 號	The product carbon footprint with the declared unit of one cubic meter series Portland limestone cement ready-mixed concrete is verified as following table.

The conclusions for different engagement types are explained as follows:
Verification

- Verification activities are based on reasonable level of assurance and include the following greenhouse gas emissions.
 - the stationary combustion, mobile combustion and fugitive emissions in production stage of product life cycle
 - purchased electricity and water resource in production stage of life cycle
 - disposal and treatment of waste generated in operations
 - partial production-related raw materials acquisition (Portland limestone cement)
- The data and information of greenhouse gas emissions are based on historical in nature, and no material misstatements in this product life cycle greenhouse gas emission statement were revealed.

Agreed upon procedures (AUP)

- AUP are specific types of verification activities, BSI have performed the evidence-gathering procedures and enumerated below with respect to the upstream and downstream GHGs emissions information.
 - all production-related raw materials acquisition and transportation (except Portland limestone cement)
 - transportation of waste generated in operations
- BSI do not express any assurance on the GHG emissions, removals and storage.

(Unit: Kg CO₂e)

Product Name	Compressive Strength (psi)	Emissions for Each Engagement Types		Total Emissions
		Agreed-upon Procedures (AUP)	Verification	
One cubic meter Portland limestone cement ready-mixed concrete (Minimum usage of cement in cementitious materials & 50% cement replacement materials) 每立方公尺石灰石水泥預拌混凝土(優化配比 50%水泥)	2000	31.928	102.151	134.08
	2500	33.860	106.798	140.66
	3000	35.166	121.838	157.00
	4000	38.259	144.398	182.66

Originally Registration Date: 2025-02-04
Latest Revision Date: 2025-02-04

Effective Date: 2025-02-04
Expiry Date: 2027-02-03

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BSI Taiwan is a subsidiary of British Standards Institution.

Statement No: PCFV 817875

Location	Verification Information
TCC Group Holdings Co., Ltd. Taichung Cement Products Plant No. 785, Sec. 3, Zhongqing Rd. Daya Dist., Taichung City 428412, Taiwan 臺灣水泥股份有限公司台中水泥製品廠 臺灣台中市大雅區中清路三段 785 號	The product carbon footprint with the declared unit of one cubic meter series Portland limestone cement ready-mixed concrete is verified as following table.

The conclusions for different engagement types are explained as follows:

Verification

- Verification activities are based on reasonable level of assurance and include the following greenhouse gas emissions.
 - the stationary combustion, mobile combustion and fugitive emissions in production stage of product life cycle
 - purchased electricity and water resource in production stage of life cycle
 - disposal and treatment of waste generated in operations
 - partial production-related raw materials acquisition (Portland limestone cement)
- The data and information of greenhouse gas emissions are based on historical in nature, and no material misstatements in this product life cycle greenhouse gas emission statement were revealed.

Agreed upon procedures (AUP)

- AUP are specific types of verification activities, BSI have performed the evidence-gathering procedures and enumerated below with respect to the upstream and downstream GHGs emissions information.
 - all production-related raw materials acquisition and transportation (except Portland limestone cement)
 - transportation of waste generated in operations
- BSI do not express any assurance on the GHG emissions, removals and storage.

Product Name	Compressive Strength (psi)	Emissions for Each Engagement Types		Total Emissions
		Agreed-upon Procedures (AUP)	Verification	
One cubic meter Portland limestone cement ready-mixed concrete (Minimum usage of cement in cementitious materials & 50% cement replacement materials) 每立方公尺石灰石水泥預拌混凝土(優化配比 50%水泥)	2000	26.947	104.654	131.60
	2500	25.801	94.958	120.76
	3000	28.230	119.873	148.10
	4000	29.637	138.116	167.75
	5000	32.183	168.038	200.22
	6000	32.634	190.821	223.46

Originally Registration Date: 2025-02-04

Latest Revision Date: 2025-02-04

Effective Date: 2025-02-04

Expiry Date: 2027-02-03

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Statement No: PCFV 817875

Location	Verification Information
TCC Group Holdings Co., Ltd. Taichung Cement Products Plant Dadu Branch No. 303, Sec. 2, Shatian Rd., Dadu Dist. Taichung City 432011, Taiwan 臺灣水泥股份有限公司 台中水泥製品廠大肚分廠 臺灣台中市大肚區沙田路二段 303 號	The product carbon footprint with the declared unit of one cubic meter series Portland limestone cement ready-mixed concrete is verified as following table.

The conclusions for different engagement types are explained as follows:

Verification

- Verification activities are based on reasonable level of assurance and include the following greenhouse gas emissions.
 - the stationary combustion, mobile combustion and fugitive emissions in production stage of product life cycle
 - purchased electricity and water resource in production stage of life cycle
 - disposal and treatment of waste generated in operations
 - partial production-related raw materials acquisition (Portland limestone cement)
- The data and information of greenhouse gas emissions are based on historical in nature, and no material misstatements in this product life cycle greenhouse gas emission statement were revealed.

Agreed upon procedures (AUP)

- AUP are specific types of verification activities, BSI have performed the evidence-gathering procedures and enumerated below with respect to the upstream and downstream GHGs emissions information.
 - all production-related raw materials acquisition and transportation (except Portland limestone cement)
 - transportation of waste generated in operations
- BSI do not express any assurance on the GHG emissions, removals and storage.

(Unit: Kg CO₂e)

Product Name	Compressive Strength (psi)	Emissions for Each Engagement Types		Total Emissions
		Agreed-upon Procedures (AUP)	Verification	
One cubic meter Portland limestone cement ready-mixed concrete (Minimum usage of cement in cementitious materials & 50% cement replacement materials) 每立方公尺石灰石水泥預拌混凝土(優化配比 50%水泥)	2000	26.792	105.708	132.50
	2500	27.257	110.588	137.85
	3000	28.131	122.135	150.27
	4000	29.372	140.752	170.12
	5000	32.295	173.711	206.01
	6000	33.272	213.848	247.12

Originally Registration Date: 2025-02-04

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Effective Date: 2025-02-04

Expiry Date: 2027-02-03

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Taiwan Headquarters: 2nd Floor, No. 37, Ji-Hu Rd., Nei-Hu Dist., Taipei 114, Taiwan, R.O.C.
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Location	Verification Information
TCC Group Holdings Co., Ltd. Taichung Cement Products Plant Shengang Branch No. 202, Xizhou Rd., Shengang Dist. Taichung City 429008, Taiwan 臺灣水泥股份有限公司 台中水泥製品廠神岡分廠 臺灣台中市神岡區溪洲路 202 號	The product carbon footprint with the declared unit of one cubic meter series Portland limestone cement ready-mixed concrete is verified as following table.

The conclusions for different engagement types are explained as follows:
Verification

- Verification activities are based on reasonable level of assurance and include the following greenhouse gas emissions.
 - the stationary combustion, mobile combustion and fugitive emissions in production stage of product life cycle
 - purchased electricity and water resource in production stage of life cycle
 - disposal and treatment of waste generated in operations
 - partial production-related raw materials acquisition (Portland limestone cement)
 - The data and information of greenhouse gas emissions are based on historical in nature, and no material misstatements in this product life cycle greenhouse gas emission statement were revealed.
- Agreed upon procedures (AUP)
- AUP are specific types of verification activities, BSI have performed the evidence-gathering procedures and enumerated below with respect to the upstream and downstream GHGs emissions information.
 - all production-related raw materials acquisition and transportation (except Portland limestone cement)
 - transportation of waste generated in operations
 - BSI do not express any assurance on the GHG emissions, removals and storage.

Product Name	Compressive Strength (psi)	Emissions for Each Engagement Types		Total Emissions
		Agreed-upon Procedures (AUP)	Verification	
One cubic meter Portland limestone cement ready-mixed concrete (Minimum usage of cement in cementitious materials & 50% cement replacement materials) 每立方公尺石灰石水泥預拌混凝土(優化配比 50%水泥)	2000	23.282	106.032	129.31
	2500	23.805	111.398	135.20
	3000	25.104	122.990	148.09
	4000	26.721	138.020	164.74
	5000	29.017	171.558	200.57
	6000	31.115	202.175	233.29

Originally Registration Date: 2025-02-04
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Effective Date: 2025-02-04
Expiry Date: 2027-02-03

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Location	Verification Information
TCC Group Holdings Co., Ltd. Taichung Cement Products Plant Caotun Branch No. 137, Renhe Rd., Nantou City Nantou County 540027, Taiwan 臺灣水泥股份有限公司 台中水泥製品廠草屯分廠 臺灣南投縣南投市仁和路 137 號	The product carbon footprint with the declared unit of one cubic meter series Portland limestone cement ready-mixed concrete is verified as following table.

The conclusions for different engagement types are explained as follows:

Verification

- Verification activities are based on reasonable level of assurance and include the following greenhouse gas emissions.
 - the stationary combustion, mobile combustion and fugitive emissions in production stage of product life cycle
 - purchased electricity and water resource in production stage of life cycle
 - disposal and treatment of waste generated in operations
 - partial production-related raw materials acquisition (Portland limestone cement)
- The data and information of greenhouse gas emissions are based on historical in nature, and no material misstatements in this product life cycle greenhouse gas emission statement were revealed.

Agreed upon procedures (AUP)

- AUP are specific types of verification activities, BSI have performed the evidence-gathering procedures and enumerated below with respect to the upstream and downstream GHGs emissions information.
 - all production-related raw materials acquisition and transportation (except Portland limestone cement)
 - transportation of waste generated in operations
- BSI do not express any assurance on the GHG emissions, removals and storage.

(Unit: Kg CO₂e)

Product Name	Compressive Strength (psi)	Emissions for Each Engagement Types		Total Emissions
		Agreed-upon Procedures (AUP)	Verification	
One cubic meter Portland limestone cement ready-mixed concrete (Minimum usage of cement in cementitious materials & 50% cement replacement materials) 每立方公尺石灰石水泥預拌混凝土(優化配比 50%水泥)	2000	28.595	106.591	135.19
	2500	29.114	111.855	140.97
	3000	29.869	117.677	147.55
	4000	31.628	141.574	173.20
	5000	35.263	178.559	213.82
	6000	36.482	198.335	234.82

Originally Registration Date: 2025-02-04

Latest Revision Date: 2025-02-04

Effective Date: 2025-02-04

Expiry Date: 2027-02-03

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Taiwan Headquarters: 2nd Floor, No. 37, Ji-Hu Rd., Nei-Hu Dist., Taipei 114, Taiwan, R.O.C.
BSI Taiwan is a subsidiary of British Standards Institution.

Location	Verification Information
TCC Group Holdings Co., Ltd. Kaohsiung Cement Products Plant No. 16, Gongye 1st Rd., Renwu Dist. Kaohsiung City 814036, Taiwan 臺灣水泥股份有限公司 高雄水泥製品廠 臺灣高雄市仁武區工業一路 16 號	The product carbon footprint with the declared unit of one cubic meter series Portland limestone cement ready-mixed concrete is verified as following table.

The conclusions for different engagement types are explained as follows:

Verification

- Verification activities are based on reasonable level of assurance and include the following greenhouse gas emissions.
 - the stationary combustion, mobile combustion and fugitive emissions in production stage of product life cycle
 - purchased electricity and water resource in production stage of life cycle
 - disposal and treatment of waste generated in operations
 - partial production-related raw materials acquisition (Portland limestone cement)
- The data and information of greenhouse gas emissions are based on historical in nature, and no material misstatements in this product life cycle greenhouse gas emission statement were revealed.

Agreed upon procedures (AUP)

- AUP are specific types of verification activities, BSI have performed the evidence-gathering procedures and enumerated below with respect to the upstream and downstream GHGs emissions information.
 - all production-related raw materials acquisition and transportation (except Portland limestone cement)
 - transportation of waste generated in operations
- BSI do not express any assurance on the GHG emissions, removals and storage.

(Unit: Kg CO₂e)

Product Name	Compressive Strength (psi)	Emissions for Each Engagement Types		Total Emissions
		Agreed-upon Procedures (AUP)	Verification	
One cubic meter Portland limestone cement ready-mixed concrete (Minimum usage of cement in cementitious materials & 50% cement replacement materials) 每立方公尺石灰石水泥預拌混凝土(優化配比 50%水泥)	2000	32.901	96.169	129.07
	2500	33.266	100.681	133.95
	3000	34.542	118.321	152.86
	4000	36.923	146.169	183.09
	5000	38.381	166.927	205.31
	6000	39.753	190.169	229.92

Originally Registration Date: 2025-02-04

Latest Revision Date: 2025-02-04

Effective Date: 2025-02-04

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Taiwan Headquarters: 2nd Floor, No. 37, Ji-Hu Rd., Nei-Hu Dist., Taipei 114, Taiwan, R.O.C.
BSI Taiwan is a subsidiary of British Standards Institution.

Location	Verification Information
TCC Group Holdings Co., Ltd. Kaohsiung Cement Products Plant Chiayi Branch No. 8, Xinsheng St., Minxiong Township Chiayi County 621011, Taiwan 臺灣水泥股份有限公司 高雄水泥製品廠嘉義分廠 臺灣嘉義縣民雄鄉民雄工業區新生街 8 號	The product carbon footprint with the declared unit of one cubic meter series Portland limestone cement ready-mixed concrete is verified as following table.

The conclusions for different engagement types are explained as follows:
Verification

- Verification activities are based on reasonable level of assurance and include the following greenhouse gas emissions.
 - the stationary combustion, mobile combustion and fugitive emissions in production stage of product life cycle
 - purchased electricity and water resource in production stage of life cycle
 - disposal and treatment of waste generated in operations
 - partial production-related raw materials acquisition (Portland limestone cement)
 - The data and information of greenhouse gas emissions are based on historical in nature, and no material misstatements in this product life cycle greenhouse gas emission statement were revealed.
- Agreed upon procedures (AUP)
- AUP are specific types of verification activities, BSI have performed the evidence-gathering procedures and enumerated below with respect to the upstream and downstream GHGs emissions information.
 - all production-related raw materials acquisition and transportation (except Portland limestone cement)
 - transportation of waste generated in operations
 - BSI do not express any assurance on the GHG emissions, removals and storage.

Product Name	Compressive Strength (psi)	Emissions for Each Engagement Types		Total Emissions
		Agreed-upon Procedures (AUP)	Verification	
One cubic meter Portland limestone cement ready-mixed concrete (Minimum usage of cement in cementitious materials & 50% cement replacement materials) 每立方公尺石灰石水泥預拌混凝土(優化配比 50%水泥)	2000	44.788	85.427	130.21
	2500	45.641	97.240	142.88
	3000	47.389	112.288	159.68
	4000	48.901	127.245	176.15
	5000	51.402	167.192	218.59
	6000	51.952	174.712	226.66

Originally Registration Date: 2025-02-04
Latest Revision Date: 2025-02-04

Effective Date: 2025-02-04
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Statement No: PCFV 817875

Location	Verification Information
TCC Group Holdings Co., Ltd. Kaohsiung Cement Products Plant Tainan Branch No. 36, Taiyi 7th St., Rende Dist. Tainan City 717019, Taiwan 臺灣水泥股份有限公司 高雄水泥製品廠台南分廠 臺灣台南市仁德區太乙七街 36 號	The product carbon footprint with the declared unit of one cubic meter series Portland limestone cement ready-mixed concrete is verified as following table.

The conclusions for different engagement types are explained as follows:
Verification

- Verification activities are based on reasonable level of assurance and include the following greenhouse gas emissions.
 - the stationary combustion, mobile combustion and fugitive emissions in production stage of product life cycle
 - purchased electricity and water resource in production stage of life cycle
 - disposal and treatment of waste generated in operations
 - partial production-related raw materials acquisition (Portland limestone cement)
- The data and information of greenhouse gas emissions are based on historical in nature, and no material misstatements in this product life cycle greenhouse gas emission statement were revealed.

Agreed upon procedures (AUP)

- AUP are specific types of verification activities, BSI have performed the evidence-gathering procedures and enumerated below with respect to the upstream and downstream GHGs emissions information.
 - all production-related raw materials acquisition and transportation (except Portland limestone cement)
 - transportation of waste generated in operations
- BSI do not express any assurance on the GHG emissions, removals and storage.

(Unit: Kg CO₂e)

Product Name	Compressive Strength (psi)	Emissions for Each Engagement Types		Total Emissions
		Agreed-upon Procedures (AUP)	Verification	
One cubic meter Portland limestone cement ready-mixed concrete (Minimum usage of cement in cementitious materials & 50% cement replacement materials) 每立方公尺石灰石水泥預拌混凝土(優化配比 50%水泥)	2000	43.163	90.151	133.31
	2500	43.836	96.919	140.76
	3000	44.871	115.719	160.59
	4000	46.227	137.527	183.75
	5000	48.282	157.079	205.36
	6000	49.642	179.639	229.28

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Effective Date: 2025-02-04

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Taiwan Headquarters: 2nd Floor, No. 37, Ji-Hu Rd., Nei-Hu Dist., Taipei 114, Taiwan, R.O.C.
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Statement No: PCFV 817875

Location	Verification Information
TCC Group Holdings Co., Ltd. Kaohsiung Cement Products Plant Xiaogang Branch No. 12, Zhonglin Rd., Xiaogang Dist. Kaohsiung City 812039, Taiwan 臺灣水泥股份有限公司 高雄水泥製品廠小港分廠 臺灣高雄市小港區中林路 12 號	The product carbon footprint with the declared unit of one cubic meter series Portland limestone cement ready-mixed concrete is verified as following table.

The conclusions for different engagement types are explained as follows:
Verification

- Verification activities are based on reasonable level of assurance and include the following greenhouse gas emissions.
 - the stationary combustion, mobile combustion and fugitive emissions in production stage of product life cycle
 - purchased electricity and water resource in production stage of life cycle
 - disposal and treatment of waste generated in operations
 - partial production-related raw materials acquisition (Portland limestone cement)
- The data and information of greenhouse gas emissions are based on historical in nature, and no material misstatements in this product life cycle greenhouse gas emission statement were revealed.

Agreed upon procedures (AUP)

- AUP are specific types of verification activities, BSI have performed the evidence-gathering procedures and enumerated below with respect to the upstream and downstream GHGs emissions information.
 - all production-related raw materials acquisition and transportation (except Portland limestone cement)
 - transportation of waste generated in operations
- BSI do not express any assurance on the GHG emissions, removals and storage.

Product Name	Compressive Strength (psi)	Emissions for Each Engagement Types		Total Emissions
		Agreed-upon Procedures (AUP)	Verification	
One cubic meter Portland limestone cement ready-mixed concrete (Minimum usage of cement in cementitious materials & 50% cement replacement materials) 每立方公尺石灰石水泥預拌混凝土(優化配比 50%水泥)	2000	25.531	95.672	121.20
	2500	25.891	100.184	126.08
	3000	27.341	118.232	145.57
	4000	29.355	140.792	170.15
	5000	31.044	163.352	194.40
	6000	33.110	189.672	222.78

Originally Registration Date: 2025-02-04
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Location	Verification Information
TCC Group Holdings Co., Ltd. Kaohsiung Cement Products Plant Aniping Branch No. 84-2, Xinle Rd., South Dist. Tainan City 702008, Taiwan 臺灣水泥股份有限公司 高雄水泥製品廠安平分廠 臺灣台南市南區新樂路 84-2 號	The product carbon footprint with the declared unit of one cubic meter series Portland limestone cement ready-mixed concrete is verified as following table.

The conclusions for different engagement types are explained as follows:
Verification

- Verification activities are based on reasonable level of assurance and include the following greenhouse gas emissions.
 - the stationary combustion, mobile combustion and fugitive emissions in production stage of product life cycle
 - purchased electricity and water resource in production stage of life cycle
 - disposal and treatment of waste generated in operations
 - partial production-related raw materials acquisition (Portland limestone cement)
 - The data and information of greenhouse gas emissions are based on historical in nature, and no material misstatements in this product life cycle greenhouse gas emission statement were revealed.
- Agreed upon procedures (AUP)
- AUP are specific types of verification activities, BSI have performed the evidence-gathering procedures and enumerated below with respect to the upstream and downstream GHGs emissions information.
 - all production-related raw materials acquisition and transportation (except Portland limestone cement)
 - transportation of waste generated in operations
 - BSI do not express any assurance on the GHG emissions, removals and storage.

(Unit: Kg CO₂e)

Product Name	Compressive Strength (psi)	Emissions for Each Engagement Types		Total Emissions
		Agreed-upon Procedures (AUP)	Verification	
One cubic meter Portland limestone cement ready-mixed concrete (Minimum usage of cement in cementitious materials & 50% cement replacement materials) 每立方公尺石灰石水泥預拌混凝土(優化配比 50%水泥)	2000	36.998	89.740	126.74
	2500	37.716	96.508	134.22
	3000	38.610	115.308	153.92
	4000	40.358	137.116	177.47
	5000	42.362	156.668	199.03
	6000	44.111	179.228	223.34

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Taiwan Headquarters: 2nd Floor, No. 37, Ji-Hu Rd., Nei-Hu Dist., Taipei 114, Taiwan, R.O.C.
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Statement No: PCFV 817875

Location	Verification Information
TCC Group Holdings Co., Ltd. Kaohsiung Cement Products Plant Nanzi Branch No. 99-1, Gaonan Highway, Renwu Dist. Kaohsiung City 814032, Taiwan 臺灣水泥股份有限公司 高雄水泥製品廠楠梓分廠 臺灣高雄市仁武區高楠公路 99-1 號	The product carbon footprint with the declared unit of one cubic meter series Portland limestone cement ready-mixed concrete is verified as following table.

The conclusions for different engagement types are explained as follows:
Verification

- Verification activities are based on reasonable level of assurance and include the following greenhouse gas emissions.
 - the stationary combustion, mobile combustion and fugitive emissions in production stage of product life cycle
 - purchased electricity and water resource in production stage of life cycle
 - disposal and treatment of waste generated in operations
 - partial production-related raw materials acquisition (Portland limestone cement)
- The data and information of greenhouse gas emissions are based on historical in nature, and no material misstatements in this product life cycle greenhouse gas emission statement were revealed.

Agreed upon procedures (AUP)

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 - all production-related raw materials acquisition and transportation (except Portland limestone cement)
 - transportation of waste generated in operations
- BSI do not express any assurance on the GHG emissions, removals and storage.

(Unit: Kg CO₂e)

Product Name	Compressive Strength (psi)	Emissions for Each Engagement Types		Total Emissions
		Agreed-upon Procedures (AUP)	Verification	
One cubic meter Portland limestone cement ready-mixed concrete (Minimum usage of cement in cementitious materials & 50% cement replacement materials) 每立方公尺石灰石水泥預拌混凝土(優化配比 50%水泥)	2000	30.519	96.587	127.11
	2500	30.900	101.099	132.00
	3000	32.276	119.147	151.42
	4000	34.441	144.348	178.79
	5000	35.850	163.508	199.36
	6000	38.451	190.587	229.04

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Statement No: PCFV 817875

Location	Verification Information
TCC Group Holdings Co., Ltd. Kaohsiung Cement Products Plant Shanhua Branch No. 33, Xingnong Rd., Shanhua Dist., Tainan City 741004, Taiwan 臺灣水泥股份有限公司高雄水泥製品廠善化分廠 臺灣台南市善化區西關里興農路 33 號	The product carbon footprint with the declared unit of one cubic meter series Portland limestone cement ready-mixed concrete is verified as following table.

The conclusions for different engagement types are explained as follows:

Verification

- Verification activities are based on reasonable level of assurance and include the following greenhouse gas emissions.
 - the stationary combustion, mobile combustion and fugitive emissions in production stage of product life cycle
 - purchased electricity and water resource in production stage of life cycle
 - disposal and treatment of waste generated in operations
 - partial production-related raw materials acquisition (Portland limestone cement)
- The data and information of greenhouse gas emissions are based on historical in nature, and no material misstatements in this product life cycle greenhouse gas emission statement were revealed.

Agreed upon procedures (AUP)

- AUP are specific types of verification activities, BSI have performed the evidence-gathering procedures and enumerated below with respect to the upstream and downstream GHGs emissions information.
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- BSI do not express any assurance on the GHG emissions, removals and storage.

(Unit: Kg CO₂e)

Product Name	Compressive Strength (psi)	Emissions for Each Engagement Types		Total Emissions
		Agreed-upon Procedures (AUP)	Verification	
One cubic meter Portland limestone cement ready-mixed concrete (Minimum usage of cement in cementitious materials & 50% cement replacement materials) 每立方公尺石灰石水泥預拌混凝土(優化配比 50%水泥)	2000	38.805	91.834	130.64
	2500	39.221	95.594	134.82
	3000	40.268	122.419	162.69
	4000	41.750	137.873	179.62
	5000	43.441	158.923	202.36
	6000	46.202	189.594	235.80

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Location	Verification Information
TCC Group Holdings Co., Ltd. Kaohsiung Cement Products Plant Luzhu Branch No. 809, Daren Rd., Luzhu Dist. Kaohsiung City 821004, Taiwan 臺灣水泥股份有限公司 高雄水泥製品廠路竹分廠 臺灣高雄市路竹區社西里大仁路 809 號	The product carbon footprint with the declared unit of one cubic meter series Portland limestone cement ready-mixed concrete is verified as following table.

The conclusions for different engagement types are explained as follows:
Verification

- Verification activities are based on reasonable level of assurance and include the following greenhouse gas emissions.
 - the stationary combustion, mobile combustion and fugitive emissions in production stage of product life cycle
 - purchased electricity and water resource in production stage of life cycle
 - disposal and treatment of waste generated in operations
 - partial production-related raw materials acquisition (Portland limestone cement)
 - The data and information of greenhouse gas emissions are based on historical in nature, and no material misstatements in this product life cycle greenhouse gas emission statement were revealed.
- Agreed upon procedures (AUP)
- AUP are specific types of verification activities, BSI have performed the evidence-gathering procedures and enumerated below with respect to the upstream and downstream GHGs emissions information.
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(Unit: Kg CO₂e)

Product Name	Compressive Strength (psi)	Emissions for Each Engagement Types		Total Emissions
		Agreed-upon Procedures (AUP)	Verification	
One cubic meter Portland limestone cement ready-mixed concrete (Minimum usage of cement in cementitious materials & 50% cement replacement materials) 每立方公尺石灰石水泥預拌混凝土(優化配比 50%水泥)	2000	32.506	96.036	128.54
	2500	32.871	100.548	133.42
	3000	34.223	117.731	151.95
	4000	36.042	141.505	177.55
	5000	37.876	163.716	201.59
	6000	40.034	190.036	230.07

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Statement No: PCFV 817875

Location	Verification Information
TCC Group Holdings Co., Ltd. cement plant No. 310, Sec. 1, Datong Rd. Xizhi Dist. New Taipei City 221006 Taiwan 臺灣水泥股份有限公司水泥製品廠 臺灣 新北市 汐止區 大同路一段 310 號 221006	The product carbon footprint with the declared unit of one cubic meter series Portland limestone cement ready-mixed concrete is verified.

Product related information is as follows:

- System boundary for this product: Cradle to Gate
The product system boundary is consistent with its system boundary definition in the PCF report for product carbon footprint, which involves the acquisition of materials, process activity and the transportation of materials in the product life cycle.
- The data in this product life cycle greenhouse gas inventory report is from 2024-01-01 to 2024-08-31.
- The site-specific data include related facilities listed below from its own processes under the operational control of the organization and individual processes under the financial or operational control of the organization undertaking the CFP study.
- The secondary data include relative factors from MOENV Carbon Footprint Calculation Platform and LCA software SimaPro v9.6.0.1 (IPCC 2021 GWP 100a).

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