

Amendment Summary of Assessment Standard Ready-mixed Concrete (Version 2)

Section	Concerns	Original Assessment Standard	Change Description						
Summary of Assessment Criteria	The Summary of Assessment Criteria has been revised to ensure alignment with the related sections.								
3.3.3. Guidelines for Inclusion of Similar Products	/	Once the Applicant chooses to apply through the group certification, the data reporting for the grouped products shall follow either one of the below approaches.	Once the Applicant chooses to apply through the group certification, the data reporting for the grouped products shall follow either one of the below approaches. For any changes in materials where the recalculated CFP remains in the same rating and within the variation limits stipulated in Table 2, the existing certificates shall remain valid and no reassessment will be required.						
4.2 RESOURCE 4.2.1 Solid Waste Reuse	HKCMA highlighted the challenges faced by concrete suppliers in controlling the reuse of concrete waste on construction site and calculating solid waste reuse rate on site. HKGBC clarified that the	<i>Solid Waste Reuse – Non-core Criteria</i> <i>The Applicant can achieve maximum 10 Bonus Points under this section.</i> <u>Requirements</u> Manufacturers that achieve required utilisation rate of concrete waste generated in the production process will be granted relevant bonus points according to table below. Comprehensive utilisation of solid waste includes both recycling and reuse by the manufacturer itself, as well as recycling and utilisation by qualified third-party organisations. <i>Table 1 Requirements of solid waste reuse</i> <table><tr><th>Points</th><th>Utilisation Rate</th></tr><tr><td>10 Bonus</td><td>100%</td></tr><tr><td>5 Bonus</td><td>≥ 95%</td></tr></table>	Points	Utilisation Rate	10 Bonus	100%	5 Bonus	≥ 95%	<i>Solid Waste Reuse – Non-core Criteria</i> <i>The Applicant can achieve 5 Bonus Points under this section.</i> <u>Requirements</u> Manufacturers who implement a waste management plan to recycle concrete waste generated during the production process at the concrete batching plant, thereby reducing waste disposal to landfill, will be granted 5 Bonus Points. Examples of acceptable waste treatment methods include: • Diversion of inert concrete waste to Public Fill Reception Facilities (PFRFs) or other EPD-approved recovery and disposal facilities, through the approved Trip Ticket System; • Delivery concrete waste to third-party organisations for recycling, reuse, or upcycling.
Points	Utilisation Rate								
10 Bonus	100%								
5 Bonus	≥ 95%								

	assessment was focused solely on waste generated during the production process at the concrete batching plant.	The utilisation rate is calculated as formula below. The definition of common concrete waste is listed in Table 5. The utilisation rate of concrete waste generated during the production process should be calculated over a statistical period of 12 months. If the manufacturer has not been in operation for 12 months, the period can be appropriately shortened but should not be less than 6 months. <i>Table 5: Types of Concrete Waste</i> <table><tr><th>Common Concrete Waste</th><th>Definition</th></tr><tr><td>Returned Concrete</td><td>Cement and aggregates wasted due to spillage, over-ordering, or improper handling during the batching process.</td></tr><tr><td>Cured Concrete Waste</td><td>Leftover concrete from mixing or casting processes that cannot be reused directly in structural elements.</td></tr><tr><td>Excess Raw Materials</td><td>Excess concrete and off-cuts from the production of precast concrete components</td></tr></table>	Common Concrete Waste	Definition	Returned Concrete	Cement and aggregates wasted due to spillage, over-ordering, or improper handling during the batching process.	Cured Concrete Waste	Leftover concrete from mixing or casting processes that cannot be reused directly in structural elements.	Excess Raw Materials	Excess concrete and off-cuts from the production of precast concrete components	The definition of common concrete waste is listed in Table 4. The waste management plan shall include the sources of concrete waste generated during the production process at the concrete batching plant and the corresponding treatment and disposal routes, including whether the waste is diverted to landfill, public fill reception facilities, or third-party organisations for recycling, reuse, or upcycling. Self-declaration letter on implementation of the waste management plan, together with waste treatment records covering a statistical period of 12 months shall be submitted as supporting document together with the waste management plan. If the manufacturer has not been in operation for 12 months, the period can be appropriately shortened but should not be less than 6 months. <table><tr><th>Common Concrete Waste</th><th>Definition</th></tr><tr><td>Returned Concrete</td><td>Concrete returned back to the batching plant.</td></tr><tr><td>Cured Concrete Waste</td><td>Hardened or set concrete generated from residual concrete in mixers, washout pits, storage areas, or other production processes that cannot be reused directly.</td></tr><tr><td>Excess Concrete</td><td>Excess concrete components and off-cuts from the production of concrete.</td></tr></table>	Common Concrete Waste	Definition	Returned Concrete	Concrete returned back to the batching plant.	Cured Concrete Waste	Hardened or set concrete generated from residual concrete in mixers, washout pits, storage areas, or other production processes that cannot be reused directly.	Excess Concrete	Excess concrete components and off-cuts from the production of concrete.
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		<u>Verification</u> To obtain the points under this criterion, the following documents shall be provided for verification: - Detailed concrete waste audit reports with the types and quantities of concrete waste generated and diverted from landfill during production, and calculation of utilisation rate over the statistical period; and - Waste management initiatives / policies outlining concrete waste management practices within the organisation; and - Relevant supporting documentation such as trip ticket, delivery note for recycling concrete waste.	<u>Verification</u> To obtain the points under this criterion, the following documents shall be provided for verification: - Self-declaration letter on implementation of the waste management plan; - Waste management plan outlining concrete waste treatment work practices within the organisation; and - Relevant supporting documentation, such as trip ticket for landfill and public fill reception facilities, delivery notes from third-party organisations for recycling, reuse, or upcycling, etc.
4.2 RESOURCE 4.2.2 Recycled Materials	HKCMA highlighted the difficulty in fulfilling all items listed under the Recycled Materials criterion and expressed that the use of recycle	<i>Recycled Materials – Non-core Criteria</i> <i>The Applicant can achieve maximum 5 Bonus Points under this section.</i> <u>Requirements</u> Products containing required percentage of SCM or recycled contents in concrete mix will be awarded with 5 bonus points. Eligible SCM and recycled contents are listed as below:	<i>Recycled Materials – Non-core Criteria</i> <i>The Applicant can achieve maximum 5 Bonus Points under this section.</i> <u>Requirements</u> Products containing required percentage of SCM or recycled aggregates in concrete mix will be awarded 5 Bonus Points. Compliance with any one of the eligible SCM or recycled aggregates requirements in the Table 5 shall qualify for the product for the allocation of Bonus

	aggregates are limited with small market.	<i>Table 2: Eligible SCM and Recycled Contents</i> <table><tr><th>Eligible SCM and Recycled Contents</th><th>Required Percentage</th></tr><tr><td>Pulverised Fuel Ash (PFA) as SCM in concrete</td><td>25%</td></tr><tr><td>Ground Granulated Blast-furnace Slag (GGBS) as SCM in concrete</td><td>40%</td></tr><tr><td>Silica Fume (SF) as SCM in concrete</td><td>5%</td></tr><tr><td>Recycled aggregates in C20 concrete mix</td><td>100%</td></tr><tr><td>Recycled aggregates in C25-35 concrete mix</td><td>20%</td></tr></table>	Eligible SCM and Recycled Contents	Required Percentage	Pulverised Fuel Ash (PFA) as SCM in concrete	25%	Ground Granulated Blast-furnace Slag (GGBS) as SCM in concrete	40%	Silica Fume (SF) as SCM in concrete	5%	Recycled aggregates in C20 concrete mix	100%	Recycled aggregates in C25-35 concrete mix	20%	Points. The required percentages should be calculated at the grouped products. <i>Table 3: Eligible SCM or Recycled Aggregates</i> <table><tr><th>Eligible SCM or Recycled Aggregates</th><th>Required Percentage</th></tr><tr><td>Pulverised Fuel Ash (PFA) as SCM in concrete</td><td>25%</td></tr><tr><td>Ground Granulated Blast-furnace Slag (GGBS) as SCM in concrete</td><td>40%</td></tr><tr><td>Silica Fume (SF) as SCM in concrete</td><td>5%</td></tr><tr><td>Recycled aggregates in C20 concrete mix</td><td>100%</td></tr><tr><td>Recycled aggregates in C25-35 concrete mix</td><td>20%</td></tr></table>	Eligible SCM or Recycled Aggregates	Required Percentage	Pulverised Fuel Ash (PFA) as SCM in concrete	25%	Ground Granulated Blast-furnace Slag (GGBS) as SCM in concrete	40%	Silica Fume (SF) as SCM in concrete	5%	Recycled aggregates in C20 concrete mix	100%	Recycled aggregates in C25-35 concrete mix	20%
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4.3 ENVIRONMENT 4.3.1 Regional Materials	HKCMA expressed concern regarding the limited number of cement suppliers within the required distance	Regional Materials – Non-core Criteria <u>Verification</u> To obtain the points under this criterion, the following documents shall be provided for verification: A self-prepared calculation report with relevant supporting documentation, including but not limit to, purchase order forms showing the quantity of raw materials used, a map showing the origin for each raw material, the location of the plant, and the transportation methods.	Regional Materials – Non-core Criteria <u>Verification</u> To obtain the points under this criterion, the following documents shall be provided for verification: A self-prepared table for each concrete mix at grouped products with each localisation degree of raw materials and their supply location together with relevant supporting documentation, including but not limit to, purchase order forms showing the quantity of raw materials used, a map showing the origin supply location of the regional raw materials, and the corresponding transportation methods to the concrete product plant.																								

4.3 ENVIRONMENT 4.3.2 Use of Green Product	HKCMA sought clarification on the types of green certificates accepted and the number required.	<i>Use of Green Product – Non-core Criteria</i> <i>The Applicant can achieve maximum 5 Bonus Points under this section</i> <u>Requirements</u> 5 Bonus Points for product that demonstrates the use of certified green products. To promote the use of environmentally friendly products that have a minimal ecological impact, Applicants are encouraged to use raw materials that are certified as green products <u>Verification</u> To obtain the points under this criterion, the following documents shall be provided for verification: • Concrete mix details with source of raw materials, quantity used, and mass percentage; and • Green Product Certification of the raw materials from its suppliers; and • Relevant supporting documentation such as declaration letter to verify the use of green products in the production process, purchase order / delivery note for raw materials purchased, etc.	<i>Use of Green Product – Non-core Criteria</i> <i>The Applicant can achieve maximum 5 Bonus Points under this section</i> <u>Requirements</u> 5 Bonus Points for product that demonstrates the use of at least one certified green raw materials such as concrete admixture, cement, aggregate, etc. To promote the use of environmentally friendly products that have a minimal ecological impact, Applicants are encouraged to use raw materials that are certified as green products. Green product certifications issued under recognised local, national, or international certification schemes are also accepted. <u>Verification</u> To obtain the points under this criterion, the following documents shall be provided for verification: • Certificate(s) of the green products (CIC Green Product Certification), other national or internationally recognised scheme); and • Relevant supporting documentation such as declaration letter to verify the use of green products in the production process, purchase order / delivery note for raw materials purchased, etc.

4.4 PERFORMANCE 4.4.1 Advancement	HKCMA expressed concern regarding the difficulty of fulfilling the requirement of Option A: Design Strength vs. Actual Strength. CEDD noted that current industry practice generally followed Eurocode requirements, under which the average trial mix strength was typically designed to achieve the specified design strength plus 12 MPa, making the	Advancement – Non-core Criteria <i>The Applicant can achieve maximum 5 Bonus Points under this section, by fulfilling either one of the options below.</i> Option A: Design Strength vs. Actual Strength <u>Requirements</u> To ensure the consistent quality of ready mixed concrete, the ratio between the 28 days actual strength and the design strength of the concrete shall fulfil the requirements below: $1.15 \leq \frac{\text{Actual Strength}}{\text{Design Strength}} \leq 1.25$ <u>Verification</u> To obtain the points under this criterion, the following documents shall be provided for verification: • Calculation of the ratio of actual compressive strength and design compressive strength; • Concrete cube test reports with actual compressive strength conducted by a laboratory accredited under HOKLAS, in accordance with the testing methods specified in CS1:2010; and • Concrete mix design reports with design concrete strength. Option B: Corrosion Prevention	Advancement – Non-core Criteria <i>The Applicant can achieve maximum 5 Bonus Points under this section.</i> Corrosion Prevention <u>Requirements</u> By controlling chloride levels, the durability and longevity of the structure could be enhanced. The soluble chloride ion content in all concrete shall not exceed 0.2% of the total weight of the concreted, measured in accordance with the
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	proposed requirement difficult to fulfil. HKCMA also sought clarification on the relevance of Option B: Corrosion Prevention to carbon quantification and embodied carbon reduction, and whether compliance would require laboratory test reports.	<u>Requirements</u> By controlling chloride levels, the durability and longevity of the structure could be enhanced. The soluble chloride ion content in all concrete shall not exceed 0.2% of the total weight of the concreted, measured in accordance with the General Specification for Civil Engineering Works Volume 2 (2020 Edition), Clause 21.2.6. <u>Verification</u> To obtain the points under this criterion, the following documents shall be provided for verification: Relevant laboratory test report(s) showing the soluble chloride ion content.	General Specification for Civil Engineering Works Volume 2 (2020 Edition), Clause 21.2.6. <u>Verification</u> To obtain the points under this criterion, the following documents shall be provided for verification: - Relevant laboratory test report(s) showing the soluble chloride ion content; or - Disclaimed document on the soluble chloride ion content requirement.																								
5. SCORING	The scoring table has been revised to align with the above amendments .	<i>Table 4: Points to be awarded under the assessment criteria of this Standard</i> <table><tr><th rowspan="2">Label</th><th rowspan="2">Evaluation criteria</th><th colspan="2">Points</th><th rowspan="2">Related Beam Plus Credit</th></tr><tr><th>Basic</th><th>+Bonus</th></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table>	Label	Evaluation criteria	Points		Related Beam Plus Credit	Basic	+Bonus						<i>Table 5: Points to be awarded under the assessment criteria of this Standard</i> <table><tr><th rowspan="2">Label</th><th rowspan="2">Evaluation criteria</th><th colspan="2">Points</th><th rowspan="2">Related Beam Plus Credit</th></tr><tr><th>Basic</th><th>+Bonus</th></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table>	Label	Evaluation criteria	Points		Related Beam Plus Credit	Basic	+Bonus					
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		Carbon	CFP Quantification [CORE]	50	+10/+20 / +30/+40	MW 10		Carbon	CFP Quantification [CORE]	50	+10/+20 / +30/+40	MW 10	
		Resource	Solid Waste Reuse	-	+5/+10			Resource	Solid Waste Reuse	-	+5		
			Recycled Materials	-	+5	MW 6			Recycled Materials	-	+5	MW 6	
		Environment	Regional Materials	-	+5	MW 8		Environment	Regional Materials	-	+5	MW 8	
			Use of Green Product	-	+5	MW 9			Use of Green Product	-	+5	MW 9	
		Performance	Advancement	-	+5			Performance	Advancement	-	+5		
		InnoSmart	Innovations & Additions	-	+5	IA		InnoSmart	Innovations & Additions	-	+5	IA	
		Total: (Maximum possible: 105)		50	+55			Total: (Maximum possible: 100)		50	+50		