Affairs Council of Recycled-aggregate Concrete

Report of quality management inspection for recycled aggregate （2016 fiscal year）

Nov. 29, 2017

ACRAC

ACRAC Quality Inspection Committee

Purpose

Purpose of the quality inspection

- Improvement for the technology of recycled aggregate manufacturing factory
- To ensure the quality of recycled aggregate

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- Improvement of social reliability
- To maintain the stable quality and management of recycled aggregate
- Classification of recycled aggregate (grade)

↓

Enactment of the quality inspection system for recycled aggregate

Process

Process of establishment for quality inspection system

2011 : Established the Engineering Department in ACRAC and started to prepare the draft

2012 : The trial inspection was carried out at two recycled aggregate manufacturing factory

2013 : Studied and produced operation standard of quality inspection or manual of lecture, briefing section at the factory and invitation for inspection factory

Carried out the quality inspection at five factory

2014 : Investigation for managing information of aggregate and sampling inspection at the 5 factory certificated by ACRAC quality inspection. Two factory has been newly certificated by ACRAC quality inspection.

2015 : Investigation for managing information of aggregate and sampling inspection at the 7 factory certificated by ACRAC quality inspection. One factory has been newly certificated by ACRAC quality inspection.

2016 : Carried out quality inspection at 5 factory certificated by ACRAC quality inspection. Investigation for managing information and sampling inspection at 3 factory

2017 : Carried out quality inspection at 2 factory certificated by ACRAC quality inspection. Investigation for managing information and sampling inspection at 6 factory

One factory has been newly certificated by ACRAC quality inspection (L).

Present certificated factory : L : 4 factories M : 3 factories H : 2 factories

Summery

- Only for the member of ACRAC
- The inspection shall be carried out by the member of inspection committee who is selected by each company.

  （the members are selected among the concrete engineer, chief engineer or who has as same or higher qualification by chairman of the committee）

  ⇒The member shall be judged as two people for one set.
- The quality inspection shall be carried out based on the ACRAC quality inspection standard and the quality inspection table.

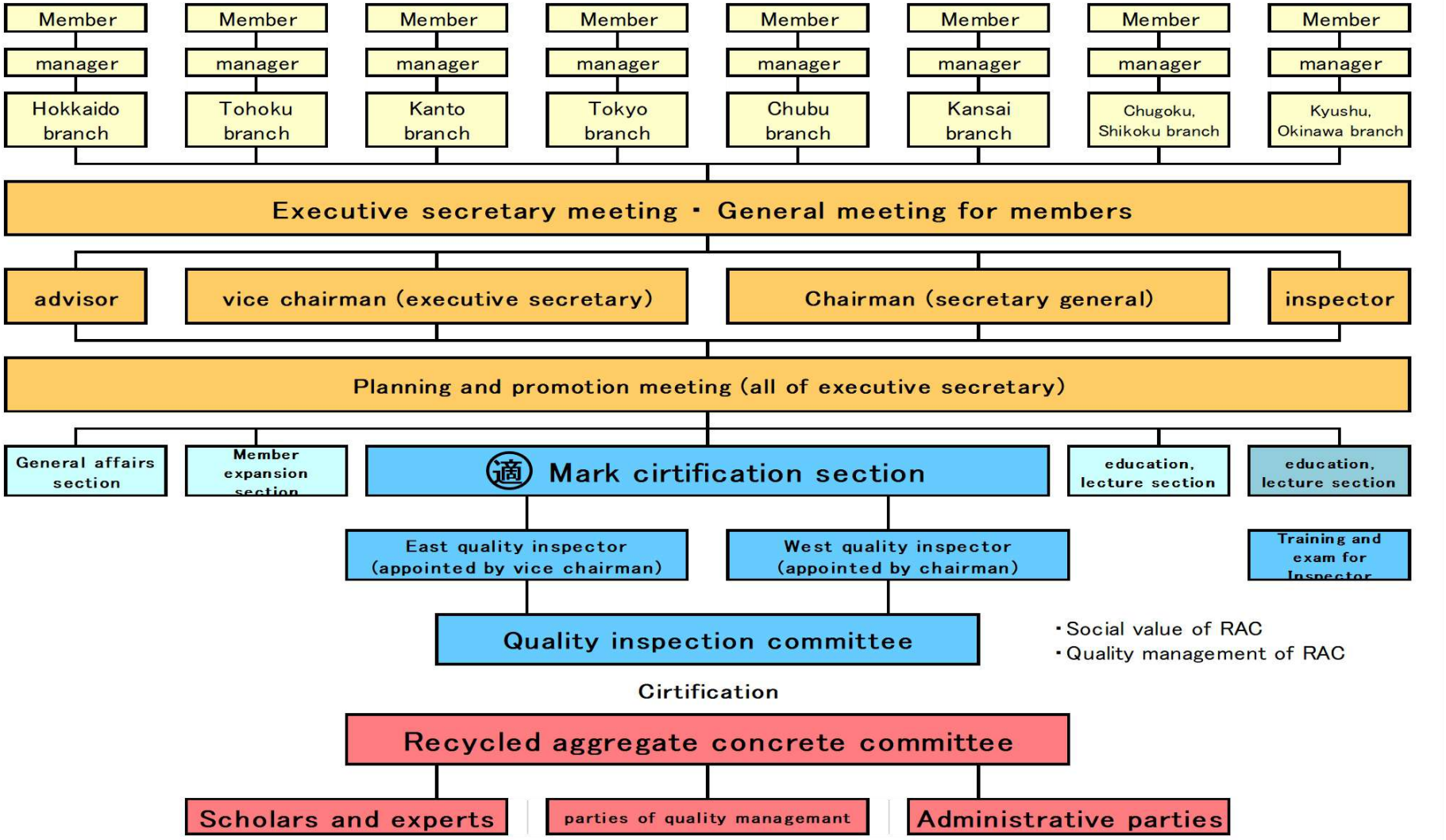
  Reconsideration of the ACRAC quality inspection standard and the quality inspection table.（once／year）

The certification shall be decided as a result of judgement by “Recycled aggregate concrete Committee” consist of chairman and members selected by scholars and experts, administrative parties, users or ACRAC engineering department. (Ref. figure 1)

“The recycled aggregate concrete committee” has been established in 2016.

The quality was judged strictly by the members of “the quality inspection committee” such as scholars and experts, administrative parties or users.

Summery（organization chart)



Figure－1　organization chart of inspection system

Summery （inspection member）

Chairman of quality inspection committee：Kaoru Ono	
East quality inspection member	West quality inspection member
Hiroyuki Sato （Miyamatu-Jonan Co., Ltd）	Shinichi Kaho （Kyoboshi Co., Ltd.）
Tomoyuki Hosono （Masuo Recycle Co., Ltd.）	Tetsuro Yoshizato （Higuchi Sangyo Corporation）
Nobuhiro Matsuda （Tokyo Techno Co., Ltd.）	

Inspection standard

The inspection standard is classified for “supervisory matters”, “individual matters” and “inspection on site(sampling specimen)

Classification	items	Contents
A. Supervisory matters		①guarantee of quality
		②suitability of recycled aggregate for concrete (applied for Green procurement item)
		③environmental load reduction
		④to ensure the technology
		⑤education and training
		⑥managing incompatibility
		⑦environmental conservation
B. Individual matters	1.Managing standard for product	①clarification for quality of product
	2．Manufacture managing standard	①original concrete（include return concrete）
		②manufacturing method
	3.Managing standard for facility	①managing manufacturing facility
		②managing inspection facility
	4.Managing standard for outside order	①management for outside order
C. Inspection on site	Inspection of product	①density
		②absorption
		③amount of material passing through sieve 75 μm

Supervisory matters（inspection standard A)

○Presence of standard or manual to ensure the quality of product

⇒company standard or manufacturing manual（①）

⇒reconsideration period for company standard or manufacturing manual（①）

○Matters for environmental load or CO2 emission

⇒Management for incoming and feeding amount of original concrete and waste, consumption of electric and fuels（②、③）

○To ensure and develop the technology

⇒selection of quality management supervisor ＊（④）

＊who has more than 3 years experience in this field and has completed the technical lecture course of ACRAC

Classification	items	Contents
A. Supervisory matters		①guarantee of quality
		②suitability of recycled aggregate for concrete (applied for Green procurement item)
		③environmental load reduction
		④to ensure the technology
		⑤education and training
		⑥managing incompatibility
		⑦environmental conservation

Individual matters（inspection standard B)

○Managing for product（1）

⇒physical character（density, absorption and amount of material passing through sieve 75 μm）・amount of impurities・Chloride content, others are conform to the standard of each factory

○Manufacture managing standard（2）

⇒management for original concrete

⇒manifest・check sheet for incoming etc.⇒manufacturing method・working method ⇒ working standard・daily management report

○Managing facility（3）

⇒manufacturing facility・stockyard・testing laboratory

○Managing for outside order（4）

⇒Mortgage for quality of product

Classification	items	Contents
B. Individual matters	1.Managing standard for product	①clarification for quality of product
	2.Manufacture managing standard	①original concrete（include return concrete）
		②manufacturing method
	3.Managing standard for facility	①managing manufacturing facility
		②managing inspection facility
	4.Managing standard for outside order	①management for outside order

Inspection on site（inspection standard C)

○Inspection of sampling product

⇒ The physical characters（density, absorption and amount of material passing through sieve 75 μm ）shall be satisfied the quality standard of JIS recycled aggregate certificated at each factory. (from now on it will consider by demand)

＊request the test to the third party of test organization to develop the social reliability

Division of recycled aggregate		Density in oven-dry condition (g/cm³)	absorption (%)	amount of material passing through sieve 75 μm (%)
H	coarse	over2.5	under3.0	under1.0
	fine	over2.5	under3.5	Under7.0
M	coarse	over2.3	Under5.0	under2.0
	fine	over2.2	Under7.0	Under8.0
L	coarse	—	under7.0	under3.0
	fine	—	under13.0	Under10.0

Classification	items	Contents
C. Inspection on site	Inspection of product	①density
		②absorption
		③amount of material passing through sieve 75 μm

Evaluation method for inspection and the result

【Evaluation method】

The density in oven-dry condition , absorption and amount of material passing through sieve 75 μm were inspected whether the value shall be satisfied the standard value at the research of quality management of product and inspection on site. The test was applied to the third party (Japan Quality Assurance Organization).

【Inspection result of 2016】

The quality management of product at certificated factory in 2016 (8 factories) was confirmed as follows. While for inspection on site, the density in oven-dry condition , absorption and amount of material passing through sieve 75 μm were confirmed satisfying the standard value.

ACRAC periodic quality inspection target factory 2017

【The periodic quality inspection target factory 2017】

Three years term of validity for 5 certificated factories in 2014 has come to the end and they became the target for inspection. According to the inspection standard, “Supervisory matters” ”individual matters” and “inspection on site” were carried out.
The test was applied to the third party (Japan Quality Assurance Organization).

Target factory	The first inspection date	Expiry date (from Apr. 1,2014)	Date of inspection	Division of aggregate	class
Higuchi Sangyo Co., Ltd	Oct. 12 ,2013	March 31, 2017	Jan. 20, 2017	coarse	L
Miyamatsu Jonan Co., Ltd. Chiba factory	Oct. 18, 2013	March 31, 2017	Dec. 16,2016	coarse	L
Musashino Doboku Kogyo Co., Ltd. Machida recycle plant	Nov. 29, 2013	March 31, 2017	Jan. 26, 2017	fine coarse	M M
Toyota Shoten Co., Ltd.	Nov. 1, 2013	March 31, 2017	Dec. 13, 2016	coarse	M
Kyoboshi Co., Ltd.	Oct. 26, 2013	March 31, 2017	Feb. 9, 2017	fine coarse	M M

Result of quality inspection 2017

Name of company	Person in charge	inspector		minus	Minus point
		chief	vice		
Toyota Shoten Co., Ltd. Jonanjima factory	Nakayama	Yoshizato	Kaho	(b) 2	①No display for division ②No low tap and flask on the manual ※Please revise to the new inspection standard
Miyamatsu Jonan Co., Ltd. Chiba factory	Sato	Matsuda	Hosono	(b) 2	①The outside order for correction of scale is not manualized
Higuchi Sangyo Co., Ltd	Yoshizato	Hosono	Matsuda	O	※The drainage of product yard was pointed out as not enough at previous inspection and it was improved.
Musashino Doboku Kogyo Co., Ltd. Machida recycle plant	Matsuda	Kaho	Yoshizato	(b) 2	①The number of thermometer is different between on the manual and inspection facility data.
Kyoboshi Co., Ltd.	Kaho	Sato	Hosono	(b) 4	①A part of the management report is not exist for managing incompatibility section ②No check mark(レ) on the incoming inspection sheet for original concrete

※ The report of improvement for matters of C is made and submitted to the committee.

The point out matters at previous concrete committee

◆opinions for discussion by the members（★the pointed out matters by the members）

1．Regarding ACRAC quality inspection system

★1.For the lectures of technical certification, not only attending but also testing system for certification shall be needed.

★2.Is it possible that the cooperation with other association such as authorized concrete engineer of ZENNAMA or Japan Concrete Institute to ensure the technology?

★3.Is it possible to level up the certification authorized by the Ministry of Land, Infrastructure, Transport and Tourism?

★4.Adding check part by experts for inspection

★5.Making sure the rock regarding alkali-silica reactivity in raw material

★6.The consideration to make relationship with industry-government-academia is needed in this committee

2．Regarding inspection for new factory

★1.Details of the factory shall be needed ①manufacturing method ②shipping amount ③water management, etc.

★2.The report for incompatibility amount of original concrete shall be needed

★3.Frequency or number of test for amount of material passing through sieve 75 μm is less

3．In the middle inspection for certification mark in 2015

★1.The point out matters other than process management shall be clarified the improvement by the document together with certification.

Initiatives in the future of quality management meeting

1. ACRAC quality inspection system

★1.★2.★3.★4.★6: We assumed to take any action after making relationship with industry-government-academia.

★5: The judgement standard for rock is not exist, while it is judged by visual inspection compare to boundary sample at incoming site of original aggregate by each vehicle.

2. The inspection for new factory

★1: The details of the factory shall be checked for system and manufacturing method(A1-1), moreover the dry system or wet system shall be shown at the inspection. The shipping and manufacturing amount of each certificated factory shall be investigated every year. The water management shall be checked for water spray facility or drainage facility.

★2: 2.The incompatibility amount of original concrete shall be reported by each incoming vehicle(10t) and 1500t or by manufacturing amount in every two weeks.

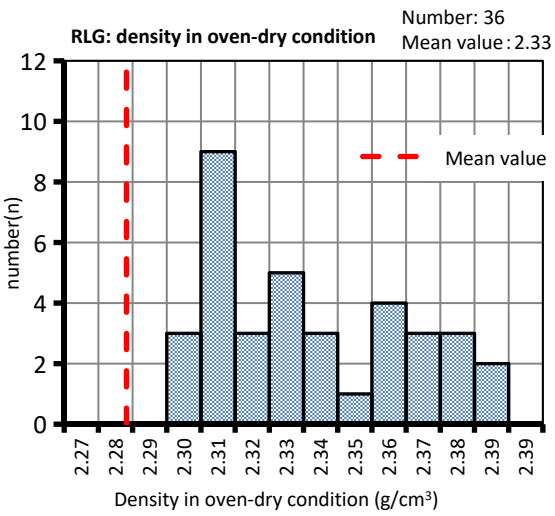
★3: The Frequency of test for amount of material passing through sieve 75 μm shall be given in present JIS standard.

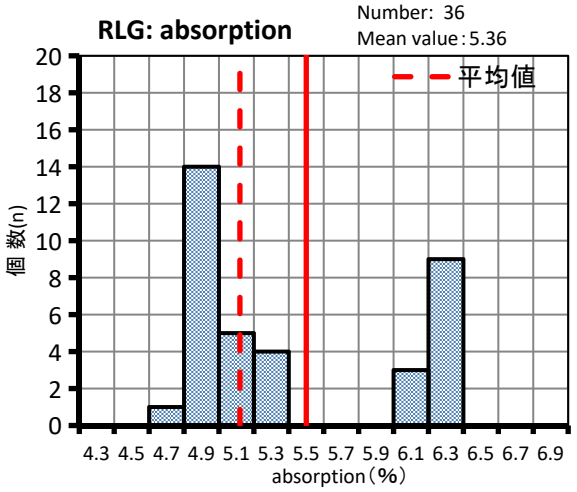
3. In the middle inspection for certification mark in 2015

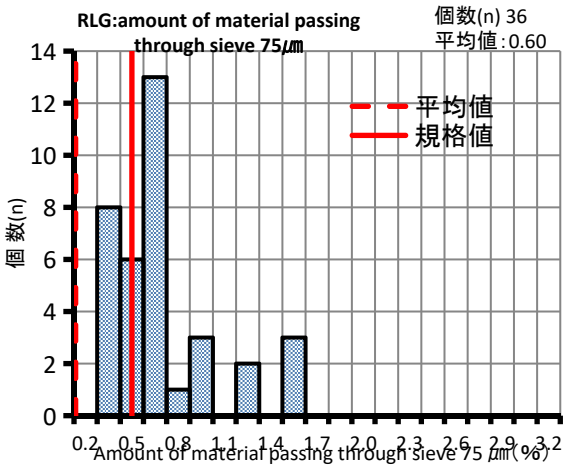
★1: Regarding b, the chief inspector shall confirm (by documents or minutes etc.) the improvement before publish the certification. For C, it shall be replied filled with the form of improvement report of attachment by setting the due date (until the quality inspection meeting of that year).

The result according to classification of recycled aggregate 2016

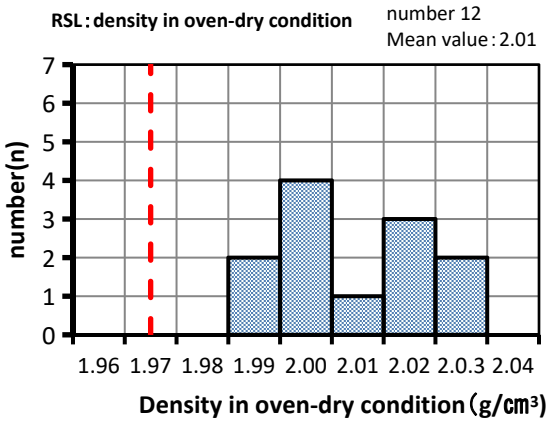
The result of recycled coarse aggregate L

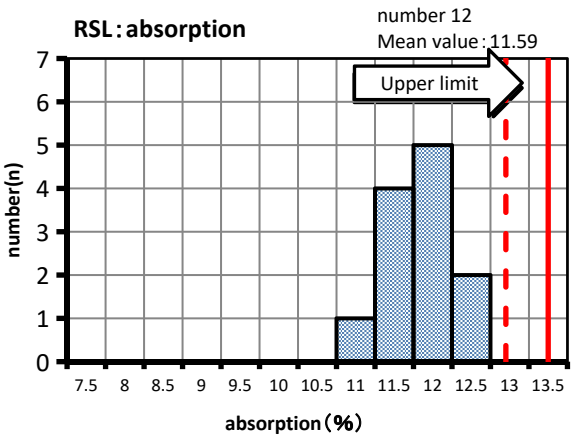


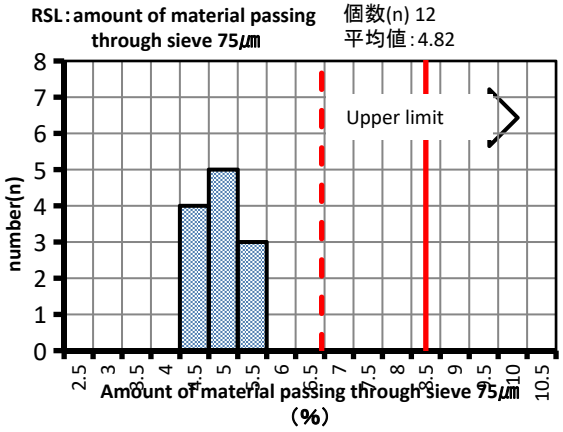




The result of recycled fine aggregate L

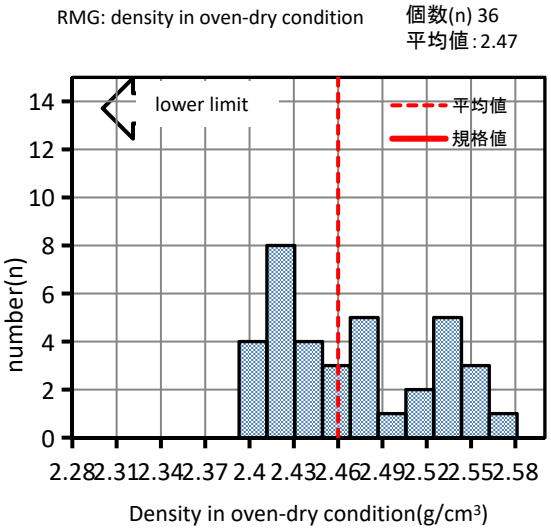


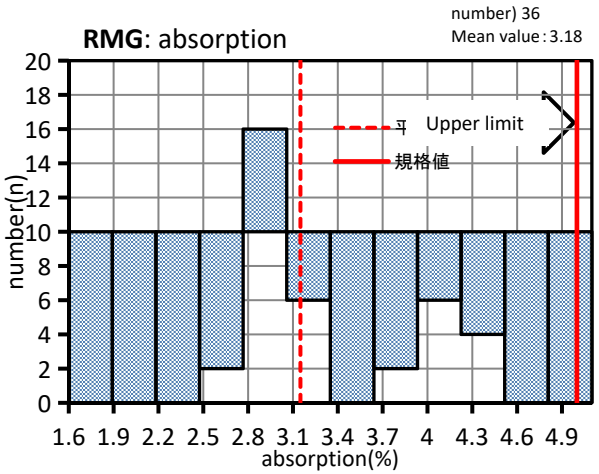


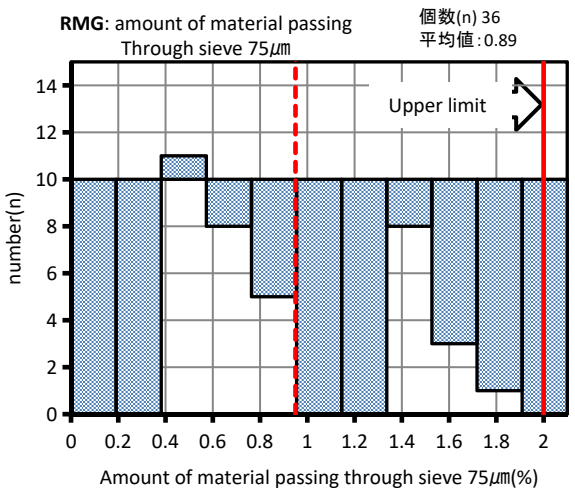


The result according to classification of recycled aggregate 2016

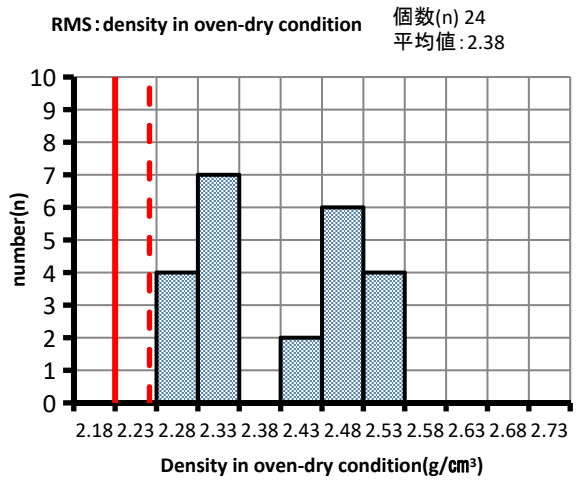
The result of recycled coarse aggregate M

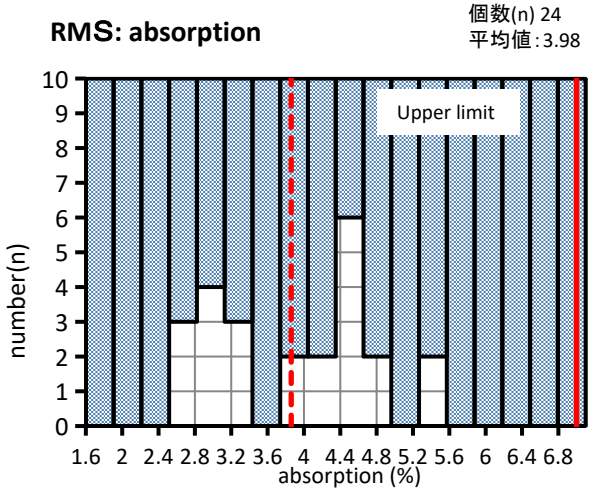


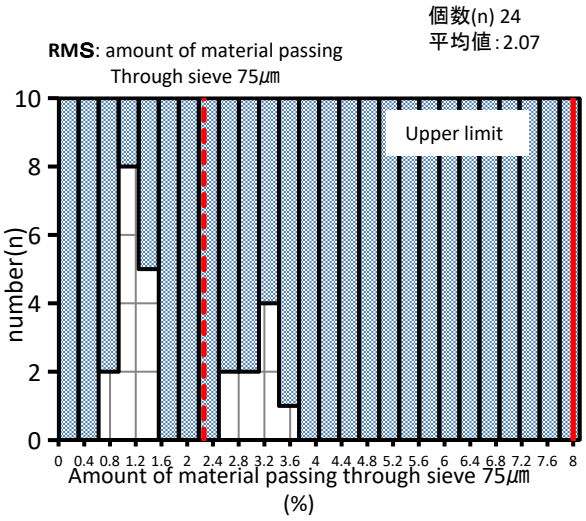




The result of recycled fine aggregate M







Inspection report of product 2016（1）

Miyamatsu Jonan Co., Ltd.

test item	
density in oven dry condition	(g/cm^3)
Absorption	(%)
amount of material passing through sieve 75 μm	(%)
finess modulus	
solid volume percentage for shape determination	(%)
Chloride content	(%)
amount of impuritied	(%)
alkali-silica reactivity test	

Recycled coarse aggregate：L　Nov. 2015 – Oct. 2016

No. of test	mean value	standard deviation	judgemant value	result	maximum value	minimum value
12	2.30	0.005	–	pass	2.30	2.29
12	4.80	0.044	under7.0	pass	4.89	4.73
12	0.58	0.049	under3.0	pass	0.65	0.50
12	6.69	0.027	6.60±0.20	pass	6.72	6.64
12	61.0	1.31	over56	pass	62.0	57.1
12	0.001	0.002	under0.04	pass	0.0	0.0
12	0.0	0.0	under3.0	pass	0.0	0.0
2	—	—	harmless	pass	harmless	

Higuchi Sangyo Co., Ltd.

test item	
density in oven dry condition	(g/cm^3)
Absorption	(%)
amount of material passing through sieve 75 μm	(%)
finess modulus	
solid volume percentage for shape determination	(%)
Chloride content	(%)
amount of impuritied	(%)
alkali-silica reactivity test	

Recycled coarse aggregate：L　Nov. 2015 – Oct. 2016

No. of test	mean value	standard deviation	judgemant value	result	maximum value	minimum value
12	2.32	0.010	–	pass	2.34	2.32
12	6.22	0.105	under7.0	pass	6.28	6.07
12	0.93	0.150	under3.0	pass	0.9	0.6
12	6.62	0.039	6.63±0.30	pass	6.68	6.57
—	—	—	–	—	—	—
12	0.02	0.004	under0.04	pass	0.025	0.012
12	0.8	0.4	under3.0	pass	0.8	0.4
—	—	—	B	—	—	—

Inspection report of product 2016（2）

Tateishi Kensetsu Kasai Factory

test item	
density in oven dry condition	(g/cm3)
Absorption	(%)
amount of material passing through sieve 75 μm	(%)
finess modulus	
solid volume percentage for shape determination	(%)
Chloride content	(%)
amount of impuritied	(%)
alkali-silica reactivity test	

Recycled coarse aggregate : L Nov. 2015 – Oct. 2016

No. of test	mean value	standard deviation	judgemant value	result	maximum value	minimum value
12	2.36	0.012	–	pass	2.38	2.35
12	5.05	0.165	under7.0	pass	5.28	4.77
12	0.32	0.103	under3.0	pass	0.5	0.2
12	6.61	0.017	6.60±0.20	pass	6.63	6.58
12	59.81	0.348	61.0±3.0	pass	60.4	59.2
12	0.02	0.002	under0.04	pass	0.023	0.016
12	0.00	0.000	under3.0	pass	0	0
—	—	—	B	—	0	0

Tateishi Kensetsu Kasai

test item	
density in oven dry condition	(g/cm3)
Absorption	(%)
amount of material passing through sieve 75 μm	(%)
finess modulus	
solid volume percentage for shape determination	(%)
Chloride content	(%)
amount of impuritied	(%)
almimun piece and zinc piece	
alkali-silica reactivity test	

Recycled coarse aggregate : L Nov. 2015 – Oct. 2016

No. of test	mean value	standard deviation	judgemant value	result	maximum value	minimum value
12	2.01	0.015	–	pass	2.03	1.99
12	11.59	0.419	under13.0	pass	12.17	10.93
12	4.82	0.375	under10.0	pass	5.3	4.2
12	3.16	0.030	3.20±0.40	pass	3.2	3.11
—	—	—	–	—	—	—
12	0.02	0.00	under0.04	pass	0.03	0.02
12	0.000	0.000	under3.0	pass	0.0	0.0
–	–	—	–	—	—	—
—	—	—	B	—	—	—

Inspection report of product 2016（3）

Toyota Shoten

test item	
density in oven dry condition	(g/cm3)
Absorption	(%)
amount of material passing through sieve 75 μm	(%)
finess modulus	
solid volume percentage for shape determination	(%)
Chloride content	(%)
amount of impuritied	(%)
almimun piece and zinc piece	
alkali-silica reactivity test	

Recycled coarse aggregate : M Nov. 2015 – Oct. 2016

No. of test	mean value	standard deviation	judgemant value	result	maximum value	minimum value
12	2.41	0.008	over2.3	pass	2.43	2.40
12	4.13	0.140	under5.0	pass	4.32	3.82
12	1.49	0.156	under2.0	pass	1.90	1.40
12	6.74	0.020	6.60±0.20	pass	6.78	6.71
12	61.7	0.418	over55	pass	62.2	60.8
12	0.003	0.001	under0.04	pass	0.00	0.00
12	0.00	0.00	under2.0	pass	0.00	0.00
12	0.80	0.23	under5ml	pass	0.80	0.80
2	—	—	harmless	pass	harmless	

Kyoboshi

test item	
density in oven dry condition	(g/cm3)
Absorption	(%)
amount of material passing through sieve 75 μm	(%)
finess modulus	
solid volume percentage for shape determination	(%)
Chloride content	(%)
amount of impuritied	(%)
almimun piece and zinc piece	
alkali-silica reactivity test	

Recycled coarse aggregate : M Nov. 2015 – Oct. 2016

No. of test	mean value	standard deviation	judgemant value	result	maximum value	minimum value
12	2.46	0.022	over2.3	pass	2.48	2.41
12	2.72	0.168	under5.0	pass	3.03	2.56
12	0.45	0.043	under2.0	pass	0.55	0.4
12	6.68	0.034	6.50±0.25	pass	6.73	6.63
12	54.88	0.376	over55	pass	55.8	54.3
12	0.00	0.00	under0.04	pass	0.004	0.002
12	0.05	0.05	under2.0	pass	0.1	0
12	0.10	0.04	under5ml	pass	0.2	0
—	—	—	B	—	—	—

武蔵野土木工業株式会社

再生粗骨材：Mクラス H27.11～H28.10

Inspection report of product 2016（4）

Kyoboshi

Recycled fine aggregate : M Nov. 2015 – Oct. 2016

test item		No. of test	mean value	standard deviation	judgemant value	result	maximum value	minimum value
density in oven dry condition	(g/cm3)	12	2.29	0.660	over2.2	pass	2.31	2.26
Absorption	(%)	12	4.81	0.427	under7.0	pass	5.65	4.41
amount of material passing through sieve 75 μm	(%)	12	1.35	0.248	under8.0	pass	1.7	0.94
finess modulus		12	2.84	0.026	2.60±0.30	pass	2.89	2.82
solid volume percentage for shape determination	(%)	—	–	–	—	—	—	—
Chloride content	(%)	12	0.006	0.001	under0.04	pass	0.007	0.005
amount of impuritied	(%)	12	0.000	0.000	under2.0	pass	0.00	0.00
almimun piece and zinc piece		12	0.11	0.05	under5ml	pass	0.2	0.0
alkali-silica reactivity test		—	—	—	B	—	—	—

Musashino Doboku Kogyo

Recycled fine aggregate : M Nov. 2015 – Oct. 2016

test item		No. of test	mean value	standard deviation	judgemant value	result	maximum value	minimum value
density in oven dry condition	(g/cm3)	12	2.47	0.026	over2.2	pass	2.52	2.43
Absorption	(%)	12	3.14	0.374	under7.0	pass	3.98	2.7
amount of material passing through sieve 75 μm	(%)	12	2.78	0.853	under8.0	pass	3.8	1.3
finess modulus		12	2.69	0.083	2.60±0.30	pass	2.83	2.55
solid volume percentage for shape determination	(%)	12	59.83	0.528	over54	pass	60.5	59
Chloride content	(%)	11	0.01	0.00	under0.04	pass	0.01	0.00
amount of impuritied	(%)	11	0.000	0.000	under2.0	pass	0.0	0.0
almimun piece and zinc piece		11	0.00	0.00	under5ml	pass	0.00	0.00
alkali-silica reactivity test		—	—	—	B	—	—	—

Inspection report of product 2016（5）

Musashino Doboku Kogyo

Recycled coarse aggregate : M Nov. 2015 – Oct. 2016

test item		No. of test	mean value	standard deviation	judgemant value	result	maximum value	minimum value
density in oven dry condition	(g/cm3)	12	2.54	0.024	over2.4	pass	2.57	2.49
Absorption	(%)	12	2.70	0.206	under4.0	pass	3.03	2.28
amount of material passing through sieve 75 μm	(%)	12	0.73	0.097	under1.0	pass	0.8	0.6
finess modulus		12	6.54	0.030	6.50±0.25	pass	6.6	6.51
solid volume percentage for shape determination	(%)	12	60.4	0.842	over55	pass	61.4	58.9
Chloride content	(%)	10	0.00	0.00	under0.04	pass	0.00	0.00
amount of impuritied	(%)	11	0.35	0.19	under2.0	pass	0.45	0.21
almimun piece and zinc piece		11	0.00	0.00	under5ml	pass	0.00	0.00
alkali-silica reactivity test		—	—	—	B	—	—	—

Inspection report of product 2016（6）

Seiyu Kogyo

test item	
density in oven dry condition	(g/cm3)
Absorption	(%)
amount of material passing through sieve 75 μm	(%)
finess modulus	
solid volume percentage for shape determination	(%)
Chloride content	(%)
amount of impuritied	(%)
almimun piece and zinc piece	
alkali-silica reactivity test	
abration test	(%)

Recycled coarse aggregate：H　　Nov. 2015 – Oct. 2016

No. of test	mean value	standard deviation	judgemant value	result	maximum value	minimum value
2	2.57	0.007	over2.5	pass	2.57	2.56
2	1.75	0.346	under3.0	pass	1.99	1.50
2	0.30	0.141	under1.0	pass	0.40	0.20
2	6.48	0.071	6.50±0.20	pass	6.53	6.43
2	62.2	0.636	over55	pass	62.6	61.7
2	0.007	0.001	under0.04	pass	0.01	0.01
2	0.00	0.00	under2.0	pass	0.00	0.00
2	0.60	0.14	under5ml	pass	0.70	0.50
2	—	—	harmless	pass	harmless	
2	—	—	under35	pass	0	0

Shinozaki Kenzai

test item	
density in oven dry condition	(g/cm3)
Absorption	(%)
amount of material passing through sieve 75 μm	(%)
finess modulus	
solid volume percentage for shape determination	(%)
Chloride content	(%)
amount of impuritied	(%)
almimun piece and zinc piece	
alkali-silica reactivity test	
abration test	(%)

Recycled fine aggregate：H　　Nov. 2015 – Oct. 2016

No. of test	mean value	standard deviation	judgemant value	result	maximum value	minimum value
2	2.56	0.014	over2.5	pass	2.57	2.55
2	2.23	0.240	under3.0	pass	2.40	2.06
2	0.25	0.071	under1.0	pass	0.30	0.20
2	6.49	0.057	6.50±0.20	pass	6.53	6.45
2	62.6	0.141	over55	pass	62.7	62.5
2	0.002	0.000	under0.04	pass	0.00	0.00
2	0.00	0.00	under2.0	pass	0.00	0.00
2	0.00	0.00	under5ml	pass	0.00	0.00
2	—	—	-	pass	-	
2	—	—	under35	pass	0	0

Result of inspection on site(sampling) 2016

name of company	division	density in oven-dry condition(g/cm^3)			absorption(%)			amount of material passing through sieve 75μm(%)		
		test result	standard value	judgement	test result	standard value	judgement	test result	standard value	judgement
Higuchi Sangyo	recycled coarse aggregate RLG	2.29	—	—	6.43	under7.0	pass	0.4	under3.0	pass
Tateishi Kensetsu	recycled coarse aggregate RLG	2.34	—	—	5.17	under7.0	pass	0.7	under3.0	pass
	recycled fine aggregate RLS	2.03	—	—	11.43	under13.0	pass	3.8	under10.0	pass
Miyamatsu Jonan	recycled coarse aggregate RLG	2.25	—	—	6.33	under7.0	pass	0.6	under3.0	pass
Kyoboshi	recycled coarse aggregate RMG	2.36	over2.3	pass	4.48	under5.0	pass	1.0	under2.0	pass
	recycled fine aggregate RMS	2.45	over2.2	pass	3.38	under7.0	pass	0.7	under8.0	pass
Musashino Doboku	recycled coarse aggregate RMG	2.50	over2.3	pass	2.63	under5.0	pass	0.2	under2.0	pass
	recycled fine aggregate RMS	2.46	over2.2	pass	3.78	under7.0	pass	1.4	under8.0	pass
Toyota Shoten	recycled coarse aggregate RMG	2.37	over2.3	pass	4.63	under5.0	pass	1.0	under2.0	pass
Seiyu Kogyo	recycled coarse aggregate RHG	2.58	over2.5	pass	1.70	under3.0	pass	0.2	under1.0	pass
Shinozaki Kenzai	recycled coarse aggregate RHG	2.54	over2.5	pass	2.74	under3.0	pass	0.5	under1.0	pass

適mark （use range of quality inspection standard conformity mark）

ACRACquality inspection standard mark

ACRAC

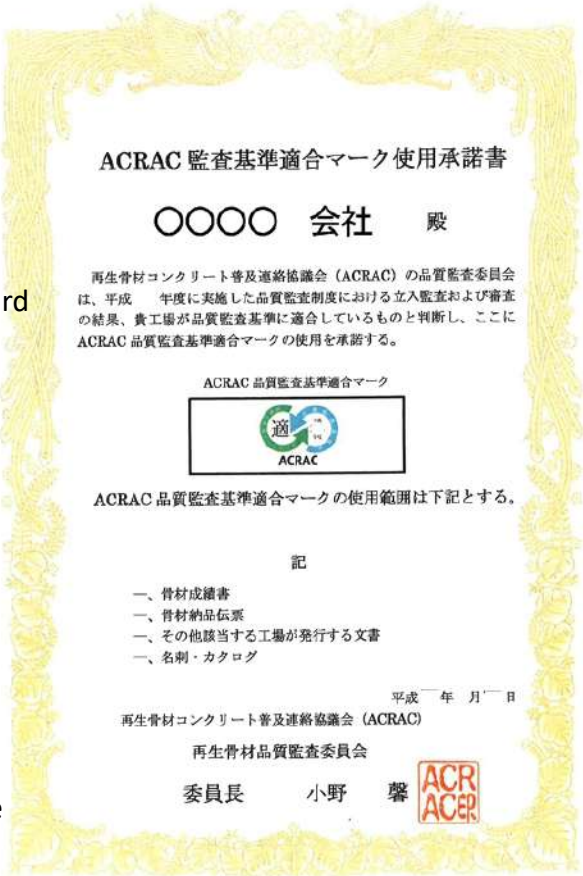
The use range of quality inspection standard mark shall be as follows.

- report card for aggregate
- statement of delivery of aggregate
- any documents published by relevant factory
- name cards, catalogues

Certification for ACRAC quality inspection

It shall be published to the factory where passed the inspection and effective term is three years. The sampling inspection shall be provided once a year in this term by Japan Quality Assurance Organization.

Written acknowledgement for using ACRAC inspection standard conformity mark



ACRAC 監査基準適合マーク使用承諾書

○○○○ 会社 殿

再生骨材コンクリート普及連絡協議会（ACRAC）の品質監査委員会は、平成　年度に実施した品質監査制度における立入監査および審査の結果、貴工場が品質監査基準に適合しているものと判断し、ここにACRAC 品質監査基準適合マークの使用を承諾する。

ACRAC 品質監査基準適合マーク

ACRAC

ACRAC 品質監査基準適合マークの使用範囲は下記とする。

記

一、骨材成績書
一、骨材納品伝票
一、その他該当する工場が発行する文書
一、名刺・カタログ

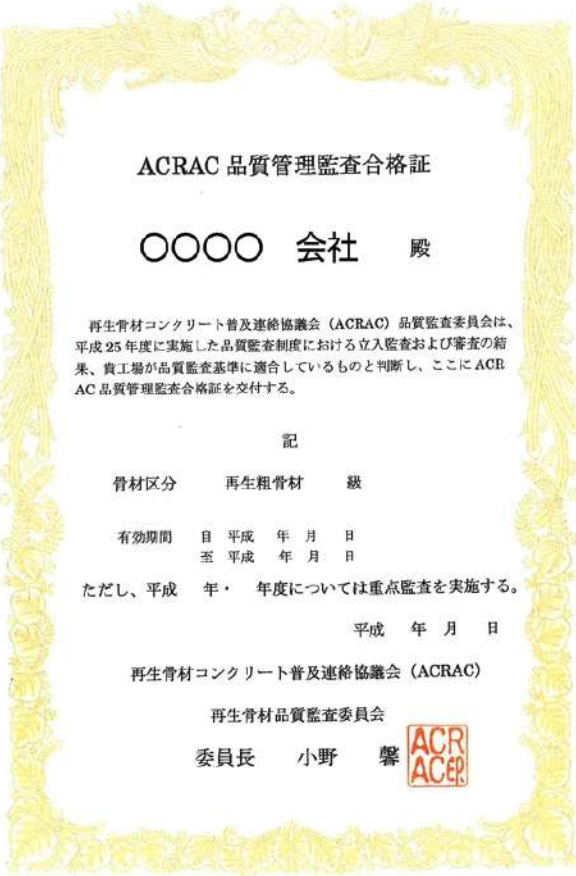
平成　年　月　日

再生骨材コンクリート普及連絡協議会（ACRAC）

再生骨材品質監査委員会

委員長　小野　馨

Certification for ACRAC quality inspection



ACRAC 品質管理監査合格証

○○○○ 会社 殿

再生骨材コンクリート普及連絡協議会（ACRAC）品質監査委員会は、平成 25 年度に実施した品質監査制度における立入監査および審査の結果、貴工場が品質監査基準に適合しているものと判断し、ここにACRAC 品質管理監査合格証を交付する。

記

骨材区分　再生粗骨材　級

有効期間　自 平成　年　月　日
至 平成　年　月　日

ただし、平成　年・　年度については重点監査を実施する。

平成　年　月　日

再生骨材コンクリート普及連絡協議会（ACRAC）

再生骨材品質監査委員会

委員長　小野　馨

ACRAC Quality inspection conformity factory 2017

Conformity factory	Division of aggregate	Division of quality
Higuchi sangyo	coarse aggregate	L
Miyamatsu Jonan　Chiba plant	coarse aggregate	L
Tateishi Kensetsu Kasai plant	fine aggregate coarse aggregate	L L
Musashino Doboku Kogyo Machida Recycle plant	fine aggregate coarse aggregate	M M
Toyota Shoten	coarse aggregate	M
Kyoboshi	fine aggregate coarse aggregate	M M
Seiyu Kogyo Jonanjima plant	coarse aggregate	H
Shinozaki Kenzai	coarse aggregate	H

ACRAC periodic quality inspection target factory 2018･2019

【The quality inspection target factory 2018】

Three years term of validity for 2 certificated factories in 2015 has come to the end and become the target for inspection. According to the inspection standard, “Supervisory matters” ”individual matters” and “inspection on site” will be carried out.

The test will be applied to the third party (Japan Quality Assurance Organization).

Target factory	First inspection date	Expiry date	Next inspection date	Division of aggregate	types
Tateishi Kensetsu Kasai plant	Feb. 3, 2015	From April.1 2015 To March 31, 2018	after Oct. 2017	coarse aggregate	L
Seiyu Kogyo Chiba plant	Feb. 4, 2015	From April.1 2015 To March 31, 2018	after Oct. 2017	coarse aggregate	H
Masuo Recycle Asaka plant	Nov. 28, 2017	From April.1 2015 To March 31, 2018	after Oct. 2020	coarse aggregate	L

【The quality inspection target factory 2019】

Three years term of validity for 1 certificated factories in 2016 has come to the end and become the target for inspection. According to the inspection standard, “Supervisory matters” ”individual matters” and “inspection on site” will be carried out.

The test will be applied to the third party (Japan Quality Assurance Organization).

Target factory	First inspection date	Expiry date	Next inspection date	Division of aggregate	types
Shinozaki Kenzai	Feb. 26, 2016	From April 1,2016 To March 31, 2019	after Oct. 2018	coarse aggregate	H