

ACCREDITATION GUIDE

Hygiene and Quality Certification for Professional Textile Services according to RAL-GZ 992



Quality · Hygiene · Safety · Sustainability

EDITION 2020

GÜTEGEMEINSCHAFT SACHGEMÄSSE WÄSCHEPFLEGE E.V.
[GERMAN CERTIFICATION ASSOCIATION FOR PROFESSIONAL TEXTILE SERVICES]
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Preliminary Note



RAL-GZ 992 was launched in 1953 with the aim to provide professional laundries with a "state of the art" hygiene, process and quality control system for reusable textiles. Over the years RAL-GZ 992 was refined and expanded to cover linen from various sectors e.g. commercial, hospitality and healthcare.

Although the hygiene requirements are different for all 4 target groups, they all have one thing in common - to render reusable textiles into a hygienic and clean state and, at the same time, preserve the original function for as long as possible. This becomes even more important if one looks at today's linen replacement costs which generally are the second biggest cost item in a commercial laundry.



RAL-GZ 992 thus covers economical as well as ecological aspects.

Looking at hygiene in general, we have to be aware of the fact that with the increase of global mobility of the business and tourist population, the risk of acquiring infectious diseases has also increased quite dramatically. HIS, SARS, H1N1 and EHEC are only a few of the infections with pandemic potential. This not only concerns hospitals but also the hospitality sector.

Guests are the major asset of hotels and restaurants and the hospitality sector should therefore do everything to prevent health problems which could originate from room, restaurant or pool linen, which is potentially contaminated because of improper laundering practices.

The healthcare sector is in a situation which is even more critical. Hospital patients are generally suffering from a reduced immune system making them extremely vulnerable to infections. Some species of bacteria and viruses have become resistant to antibiotics e.g. MRSA and VRE which opens yet another dimension to infection control. Textiles used in the healthcare sector are therefore to be processed to the highest hygiene standards possible.



“Best practice” alone is not sufficient to reach this goal. RAL in cooperation with the RKI (Robert-Koch-Institut) the German Center of Disease Control and the DGMH, the Disinfection Commission of the German Society for Hygiene and Microbiology, have introduced rules and regulations which help laundries to reach the hygiene levels necessary for the safe use of linen. In order not to leave the judgement of what is safe and what is unsafe to the interpretation of the operators, the organisations mentioned above have set clear criteria for the hygiene level (microbial contamination) which is considered to be non harmful for patients. This makes the system predictable and controllable. Everybody has to perform to identical regulations and achieve predetermined results. As regulations are only of value if they are enforceable by sanctions for non compliance, RAL also covers this very important aspect.

The protection of the user of the linen was not the only consideration in setting up the system. “Safety at the work place” was also important. This applies especially for healthcare linen which needs to be considered as potentially infectious and which, if not properly handled, could cause a severe health hazard to the handlers.

In brief, the RAL-GZ 992 system is a well proven hygiene and quality control system built on very strong normative pillars by the respective Government organisations such as the RKI. The German Certification Association for Professional Textile Services is serving as a common platform for more than 400 commercial laundries worldwide who submitted on a voluntary basis to the strictest hygiene and quality system available today for commercial laundries.

Hohenstein, a globally renowned textile research institute, was mandated with the implementation of the system in commercial laundries, the audit and certification procedures as well as, the annual revalidation and quality maintenance service which is an integral part of RAL-GZ 992.

The pages hereafter contain a detailed explanation outlining the requirements, procedures for audit and certification as well as, the revalidation and quality maintenance service.

DO YOU HAVE FURTHER QUESTIONS? YOUR CONTACT PERSON FOR ADDITIONAL INFORMATION:



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RAL-GZ 992/1 COMMERCIAL LINEN (except F&B)

Basic requirements

This certificate covers commercial linen with emphasis on process control and linen preservation. It is also the entry level for the RAL-GZ 992/2 certification explained on the following pages.

Audit and certification procedure

1. The application form for audit and certification according to RAL-GZ 992/1 must be completed, duly signed and returned to the Certification Association. With the application the applicant also accepts the annual revalidation and quality maintenance service programme according to paragraph 5, consisting of the technical and hygiene control (if applicable) as well as the processing of test fabrics for the determination of the secondary washing effect.
2. The application initiates the pre-audit by a Hohenstein expert comprising of implementation and control tasks.
 - 2.1 The basic criteria for plant and the technical facilities are according to the RAL-GZ 992/1 regulations, a summary of which is listed in the appendix pages.
 - 2.2 Introduction of key personnel of the laundry to the relevant RAL regulations.
 - 2.3 Inspection of plant and technical facilities by the Hohenstein expert according to RAL-GZ 992/1 regulations.
 - 2.4 For continuous self control, the Inspection Record Book needs to be kept and must be completed on a regular basis with relevant production data and readings of consumption figures by a person nominated by the management.



- 2.5 Analysis of process water according to requirements listed in chart 1.
- 2.6 Washing of Hohenstein standard cotton test fabrics to determine the secondary washing effect. Two test fabrics must be washed in the same washing programme 50 times. The results of the evaluation in the Hohenstein laboratories must conform to the values listed in chart 2.
3. The RAL certificate RAL-GZ 992/1 will be issued if the Hohenstein expert's findings are in compliance with RAL-GZ 992/1 regulations and if the secondary washing results of the test fabrics are within the limits indicated in chart 2.
4. The certificate is valid from the date when all requirements have been fulfilled until the rest of the year in which the certification takes place.
5. The revalidation and quality maintenance service programme is carried out by a Hohenstein expert on a yearly basis according to the control criteria mentioned in paragraph 2. The quality maintenance programme comprises the processing of test fabrics serving as an early warning system for processing problems which could lead to severe linen damage with the consequence of a reduced linen life.

5.1 Number of process indicators (test strips) to be washed per year

Tons processed per day	Number of test strips
up to 1	2
up to 2	3
up to 3	4
up to 4	5
up to 5	6
up to 7	7
up to 20	8
≥ 20	10



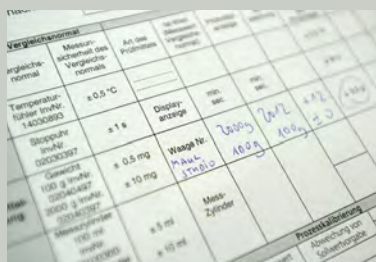
Chart 1

Water Analysis	
Process Water	Requirements Limit Values
Hardness	0 mmol/l Ca (0 hardness)
Iron	<0.01 mg/l
Manganese	< 0.03 mg/l
Copper	< 0.05 mg/l



Chart 2

Parameters tested with the washing cycle control test fabric (washed 50 times) according to RAL-GZ 992/1		
Parameters		Requirements
Strength reduction (loss in tensile strength)		max. 30 %
Chemical fibre deterioration (damage factor)		max. 1.0
Inorganic fabric incrustation (ash content)		max. 1.0 %
Whiteness quality	Degree of whiteness (DW-value)	min. 170
	CDN and tint value	R 1.5 - G 2.49
	Basic white value (Y-value)	min. 87



Specimen of the Award Certificate of RAL-GZ 992/1 Commercial Linen
(except F&B)



The image shows a specimen of an Award Certificate for RAL-GZ 992/1 Commercial Linen. The certificate features a header with the RAL GÜTEZEICHEN logo and a background image of a washing machine drum. The main title 'AWARD CERTIFICATE' is prominently displayed. The text states that the German Certification Association for Professional Textile Services awards the Quality Mark RAL-GZ 992/1 Commercial Linen to Mustermann Wäscherei. The certificate also includes the address of the recipient, Musterstraße 10, 12345 Musterstadt, MUSTERLAND. A large 'EXAMIN' watermark is visible across the center. The certificate is dated Bönningheim, 1 January 2020, and is signed by Holger Großmann, The President, and Dr. Timo Hammer, The Managing Director. The footer contains the contact information for GÜTEGEMEINSCHAFT SACHGEMÄSSE WÄSCHEPFLEGE E.V.

**AWARD
CERTIFICATE**

The German Certification Association for Professional Textile Services hereby awards the Quality Mark RAL-GZ 992/1 Commercial Linen recognized by the RAL Official German Institute for Quality Assurance and Certification and protected under the trademark law by registration with the German Patent Office.

**Mustermann
Wäscherei
Musterstraße 10
12345 Musterstadt
MUSTERLAND**

Commercial Linen
RAL Quality Mark RAL-GZ 992/1

The use of the quality mark demands that the compliance with the Quality and Test Regulations RAL-GZ 992/1 is controlled.

Bönningheim, 1 January 2020


Holger Großmann · The President


Dr. Timo Hammer · The Managing Director

GÜTEGEMEINSCHAFT SACHGEMÄSSE WÄSCHEPFLEGE E.V. · 74357 Bönningheim · GERMANY

Specimen of the Annual Certificate of RAL-GZ 992/1 Commercial Linen
(except F&B)



The image shows a specimen of an Annual Certificate for RAL-GZ 992/1 Commercial Linen. The certificate is framed by a blue border. At the top right, there is a RAL GÜTEZEICHEN logo. The main title 'ANNUAL CERTIFICATE' is in large, bold, black letters. Below it, 'Commercial Linen' and 'RAL Quality Mark RAL-GZ 992/1' are written. A large, light gray 'EXAMPLE' watermark is diagonally across the center. The text states that the certificate is awarded to the textile services company 'Mustermann Wäscherei' at 'Musterstraße 10, 12345 Musterstadt' as proof of compliance with RAL-GZ 992/1:2019. It also mentions that the certificate is valid from 1 January 2020 to 31 December 2020. At the bottom, there are two signatures: 'Holger Großmann' (The President) and 'Dr. Timo Hammer' (The Managing Director). The footer of the certificate reads 'GÜTEGEMEINSCHAFT SACHGEMÄSSE WÄSCHEPFLEGE E.V. · 74357 BÖNNIGHEIM · GERMANY'.

ANNUAL CERTIFICATE

Commercial Linen
RAL Quality Mark RAL-GZ 992/1

As a result of the tests specified by the RAL German Institute for Quality Assurance and Certification and executed by Hohenstein Laboratories, the Certification Mark Annual Certificate is being awarded to the textile services company

**Mustermann
Wäscherei
Musterstraße 10
12345 Musterstadt**

as proof of compliance with the requirements according to RAL-GZ 992/1:2019.

The Certification Mark - Annual Certificate is valid for the time period stated below, provided that no deficiencies in quality assurance occur within this period. The certificate may be used during its award period in advertising, as an appendix to bids and in order negotiations etc.

Valid from 1 January 2020 to 31 December 2020


Holger Großmann · The President


Dr. Timo Hammer · The Managing Director

GÜTEGEMEINSCHAFT SACHGEMÄSSE WÄSCHEPFLEGE E.V. · 74357 BÖNNIGHEIM · GERMANY

RAL-GZ 992/2 HEALTHCARE LINEN

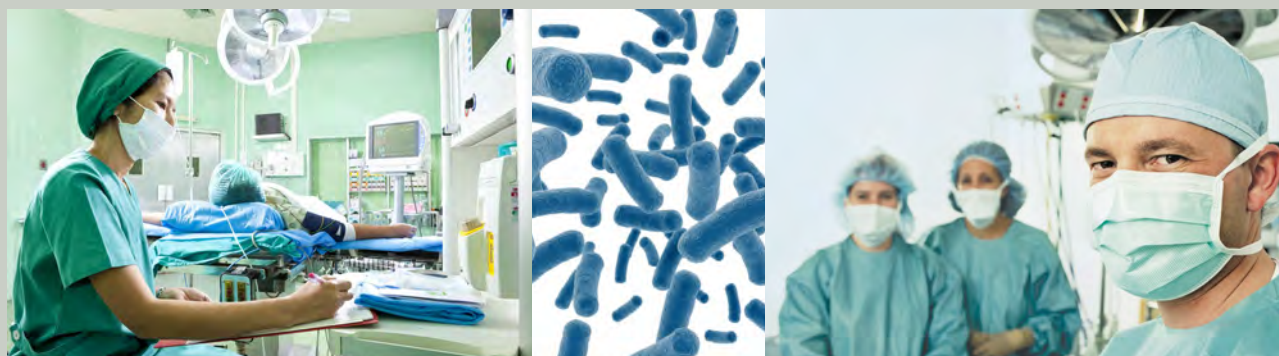
Audit and certification procedure

Because of the nature of the linen to be processed, there are certain requirements for plant and technical facilities, the most important of which is a separation between soiled and clean linen by a barrier wall. This also necessitates the use of barrier type washing equipment. Detergents and wash processes need to be in accordance with the RKI listing (Robert-Koch-Institut) which have validated disinfection washing processes and products of most major detergent suppliers.

Available only in connection with RAL-GZ 992/1 and after keeping the RAL-GZ 992/1 certificate for at least 3 months. For further details see appendix pages.

The application form for audit and certification according to RAL-GZ 992/2 must be completed, duly signed and returned to the Certification Association. With the application the applicant also accepts the annual revalidation and quality maintenance service programme according to paragraph 7, consisting of the technical and hygiene control (if applicable) as well as the processing of test fabrics for the determination of the secondary washing effect.

1. A complete RAL-GZ 992/1 audit as per page 5 to 7 is required. This includes the washing of test fabrics.
2. After the pre-audit the laundry will receive a report about the findings of the Hohenstein inspector, including results of secondary washing effect after lab evaluation of test fabrics. There will be a transition period of 6 months where all recommendations of changes or alterations have to be effected.
3. After the laundry signals that changes are effected, the final certification test according to RAL-GZ 992/2 including the hygiene test will be performed by the Hohenstein expert. Bioindicators and Rodac contact plates will be used in the production chain as per chart 4.
4. Results of hygiene tests need to be in accordance with criteria mentioned in chart 5.
5. The RAL-GZ 992/2 certificate will be issued if the Hohenstein expert's findings are in compliance with the RAL-GZ 992/1 and RAL-GZ 992/2 regulations a summary of which is contained in the appendix.



6. The certificate is valid from the date when all requirements have been fulfilled - at least 3 months after the award of RAL-GZ 992/1 - until the rest of the year in which the certification takes place.
7. The revalidation and quality maintenance service programme is carried out by a Hohenstein expert on a yearly basis according to the regulations mentioned in RAL-GZ 992/2. The quality maintenance programme comprises the processing of a number of test fabrics serving as an early warning system for processing problems which could lead to severe linen damage with the consequence of a reduced linen life.
8. If the hygiene parameters as per chart 5 are not met, the following corrective action has to be taken:



Limit values

Correction of processes by laundry and second full inspection within 4 weeks by a Hohenstein expert.

Threshold values

Correction of deficiencies by laundry within 10 days by using Rodac plates (replicate organism detection and counting). Rodac plates are provided by Hohenstein or a local laboratory, who will also carry out the microbiological tests including water tests.

Guide values

Correction of deficiencies by laundry and written confirmation of execution within 10 working days.

9. If the corrections are effected and the requirements are met, the RAL certificate will be issued with a validity of 1 calendar year.

Chart 3

Parameters tested with the washing cycle control test fabric (washed 50 times) according to RAL-GZ 992/1 and RAL-GZ 992/2		
Parameters		Requirements
Strength reduction (loss in tensile strength)		max. 30 %
Chemical fibre deterioration (damage factor)		max. 1.0
Inorganic fabric incrustation (ash content)		max. 1.0 %
Whiteness quality	Degree of whiteness (DW-value)	min. 170
	CDN and tint value	R 1.5 - G 2.49
	Basic white value (Y-value)	min. 87

Chart 4

Criteria for hygiene inspections according to RAL-GZ 992/2 Healthcare Linen					
Limit values (acc. to Robert-Koch-Institut)		Threshold values		Guide values	
Scope/ location	Permissible colony forming units (CFU)	Scope/ location	Permissible colony forming units (CFU)	Scope/ location	Permissible colony forming units (CFU)
Dry linen	9 out of 10 samples not more than 20 CFU/1 dm ²	Wet linen	30 CFU/1 dm ²	Technical facilities	100 CFU/1 dm ²
Bioindicator	must be killed	Raw water	100 CFU/1 ml	Transport storage	100 CFU/1 dm ²
---	---	Water after softening	100 CFU/1 ml	Hand hygiene	100 CFU/1 dm ²
---	---	Soft water rinsing process	100 CFU/1 ml	Soft water prewash	1000 CFU/1 ml

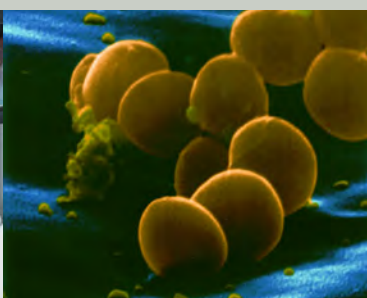
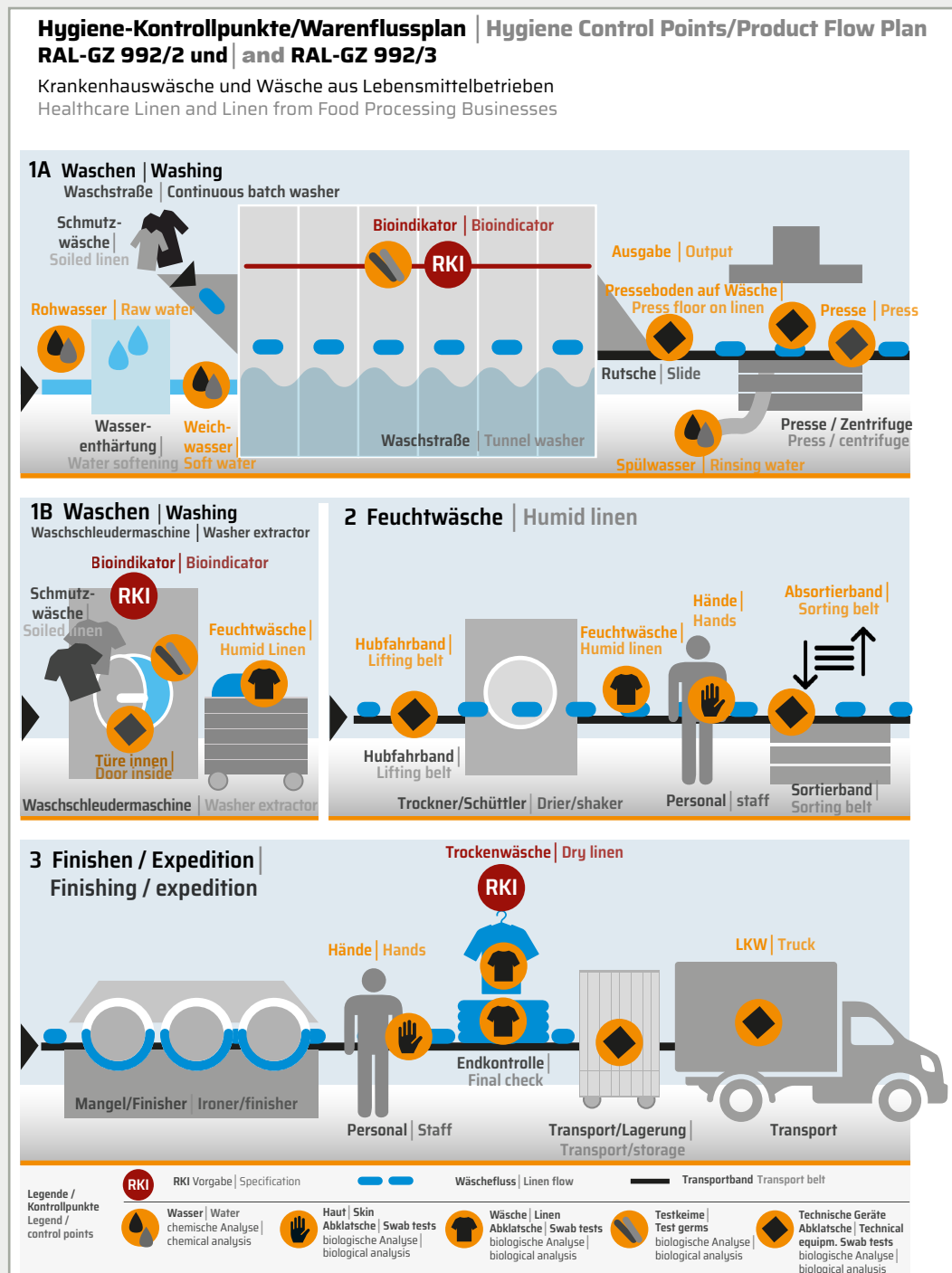


Chart 5 Locations for microbiological tests with bio indicators and Rodac contact plates



Corrective action in case of non-compliance as per paragraph 8.

Specimen of the Award Certificate of RAL-GZ 992/2 Healthcare Linen



The image shows a specimen of an award certificate. At the top right, there is a RAL logo and a washing care logo. The main title 'AWARD CERTIFICATE' is prominently displayed in the center. Below the title, a paragraph states that the German Certification Association for Professional Textile Services awards the Quality Mark RAL-GZ 992/2 Healthcare Linen. The recipient's details are listed: Mustermann, Wäscherei, Musterstraße 10, 12345 Musterstadt, MUSTERLAND. The award is for 'Healthcare Linen' with the RAL Quality Mark RAL-GZ 992/2. A paragraph explains that the use of the quality mark demands compliance with the Quality and Test Regulations RAL-GZ 992/2. The date is Bönningheim, 1 January 2020. Two signatures are present: Holger Großmann (The President) and Dr. Timo Hammer (The Managing Director). At the bottom, the full name of the association and its address are provided.

**AWARD
CERTIFICATE**

The German Certification Association for Professional Textile Services hereby awards the Quality Mark RAL-GZ 992/2 Healthcare Linen recognized by the RAL Official German Institute for Quality Assurance and Certification and protected under the trademark law by registration with the German Patent Office.

**Mustermann
Wäscherei
Musterstraße 10
12345 Musterstadt
MUSTERLAND**

Healthcare Linen
RAL Quality Mark RAL-GZ 992/2

The use of the quality mark demands that the compliance with the Quality and Test Regulations RAL-GZ 992/2 is controlled.

Bönningheim, 1 January 2020


Holger Großmann · The President


Dr. Timo Hammer · The Managing Director

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Hygiene Certificate according to RAL-GZ 992/2



The certificate template features a blue header with a stylized background of circular patterns. The RAL GÜTEZEICHEN logo is prominently displayed in the top right corner. The main title 'HYGIENE CERTIFICATE' is in large, bold, blue letters. Below it, the specific category 'Healthcare Linen' and the standard 'RAL Quality Mark RAL-GZ 992/2' are listed. A paragraph explains that the certificate is awarded based on microbiological and hygiene tests conducted by the RAL German Institute for Quality Assurance and Certification, executed by Hohenstein Laboratories. The recipient's details for 'Mustermann Wäscherei' are provided. A large, light gray 'EXAMPLE' watermark is diagonally across the center. The text states that the requirements of RAL-GZ 992/2:2019 have been fulfilled. It also includes a note about the certificate's validity for advertising and its use in bids. The validity period is specified as 'Valid from 1 January 2020 to 31 December 2020'. Two signatures are present: Holger Großmann, The President, and Dr. Timo Hammer, The Managing Director. The footer identifies the issuing organization as 'GÜTEGEMEINSCHAFT SACHGEMÄSSE WÄSCHEPFLEGE E.V.' located in Bönningheim, Germany.

HYGIENE CERTIFICATE

Healthcare Linen
RAL Quality Mark RAL-GZ 992/2

As a result of the microbiological and hygiene tests specified by the RAL German Institute for Quality Assurance and Certification and executed by Hohenstein Laboratories, the RAL Hygiene Certificate "Healthcare Linen" RAL-GZ 992/2 is being awarded to the textile services company

**Mustermann
Wäscherei
Musterstraße 10
12345 Musterstadt**

as evidence that the requirements according to RAL-GZ 992/2:2019 have been fulfilled as well as the requirements for the processing of textiles from the healthcare system (hospitals, rehabilitation clinics, nursing homes, medical practices including outpatient surgery and comparable medical treatment and care centres) which are specified in the German Law on the Prevention and Control of Infectious Diseases.

The RAL Hygiene Certificate is valid for the time period stated below, provided that no deficiencies in quality assurance occur within this period. The certificate may be used during its award period in advertising, as an appendix to bids and in order negotiations etc. Advertising only displaying the words "RAL Hygiene Certificate" on envelopes, vehicles and other similar advertising materials is not permitted.

Valid from 1 January 2020 to 31 December 2020


Holger Großmann · The President


Dr. Timo Hammer · The Managing Director

GÜTEGEMEINSCHAFT SACHGEMÄSSE WÄSCHEPFLEGE E.V. · 74357 BÖNNIGHEIM · GERMANY

Specimen of the Certificate as proof of compliance with DIN EN 14065



CERTIFICATE
HYGIENE MANAGEMENT
HEALTHCARE LINEN

The below mentioned company

**Mustermann
Wäscherei
Musterstraße 10
12345 Musterstadt**

has a hygiene management system for the processing of healthcare linen, which conforms to the European standard

DIN EN 14065:2016
**Textiles – Textiles processed in Industrial Laundries –
Biocontamination Control System**
(Risk Analysis and Biocontamination Control System · RABC)

This ensures that the microbiological quality of the textiles is maintained during processing. The Hohenstein Laboratories GmbH & Co. KG are accredited for testing according to DIN EN ISO/IEC 17020:2012.

Valid from 1 January 2020 to 31 December 2020



Dr. Timo Hammer
Managing Director

HOHENSTEIN LABORATORIES GMBH & CO. KG · Schlosssteige 1 · 74357 BÖNNIGHEIM · GERMANY

RAL-GZ 992/3 LINEN FROM HOSPITALITY SECTOR, RESTAURANTS, CATERING, FOOD PROCESSING

Basic requirements

There are certain basic requirements for plant and technical facilities the most important being a physical separation between soiled and clean linen.

For further details see appendix.

Audit and certification procedure

1. The application form for audit and certification according to RAL-GZ 992/3 must be completed, duly signed and returned to Hohenstein. With the application the applicant also accepts the annual revalidation and quality maintenance service programme according to paragraph 8 consisting of the technical and hygiene control as well as the processing of test fabrics for the determination of the secondary washing effect.
2. A complete RAL-GZ 992/1 audit as per page 5 to 7 is required.
3. After the initial audit the laundry will receive a report about the findings of the Hohenstein inspector, including results of secondary washing effect after lab evaluation of test fabrics.
There will be a transition period of 6 months where all recommendations of changes or alterations have to be effected.
4. After the laundry signals that changes are effected, the final certification test according to RAL-GZ 992/3 including the hygiene test will be performed by the Hohenstein expert. Bioindicators and Rodac contact plates will be used in the production chain as per chart 7.
5. Results of hygiene tests need to be in accordance with criteria mentioned in chart 8.
6. The RAL-GZ 992/3 certificate will be issued if the Hohenstein expert's findings are in compliance with the RAL-GZ 992/1 and 992/3 regulations, a summary of which is contained in the appendix. Criteria for the test fabrics for RAL-GZ 992/3 differ from RAL-GZ 992/1 as the wash processes might be more aggressive.
7. The certificate is valid from the date when all requirements have been fulfilled until the rest of the year in which the certification takes place.



8. The revalidation and quality maintenance service programme is done by a Hohenstein expert on a yearly basis according to the RAL-GZ 992/3 test regulations. The quality maintenance programme comprises the processing of a certain number of test fabrics as early warning system for processing problems which could lead to linen damage with the consequence of a reduced linen life.

8.1 Number of process indicators (test strips) to be washed per year

Tons processed per day	Number of test strips
up to 1	2
up to 2	3
up to 3	4
up to 4	5
up to 5	6
up to 7	7
up to 20	8
≥ 20	10

9. If the hygiene parameters as per chart 8 are not met, the following corrective action has to be taken:

Limit values

Correction of processes by laundry and second full inspection within 4 weeks by a Hohenstein expert.

Threshold values

Correction of deficiencies by laundry within 10 days by using Rodac plates (replicate organism detection and counting). Rodac plates are provided by Hohenstein or a local laboratory, who will also carry out the microbiological tests including water tests.

Guide values

Correction of deficiencies by laundry and written confirmation of execution within 10 working days.

10. If the corrections are effected and the requirements are met, the RAL certificate will be issued with a validity of 1 calendar year.

Note: There is the possibility to combine audit and certification according to RAL-GZ 992/1 and RAL-GZ 992/3 during the same visit, provided the Hohenstein expert feels confident that all requirements can be met. If there are deviations to the regulations in major areas, a second visit will have to be done.

Chart 6

Parameters tested with the washing cycle control test fabric (washed 25 times) according to RAL-GZ 992/3		
Parameters		Requirements
Strength reduction (loss in tensile strength)		max. 30 %
Chemical fibre deterioration (damage factor)		max. 1.0
Inorganic fabric incrustation (ash content)		max. 1.0 %
Whiteness quality	Degree of whiteness (DW-value)	min. 170
	Colour deviation number (CDN)	R 1.5 - G 2.49
	Basic white value (Y-value)	min. 87

Chart 7

Criteria for hygiene inspections according to RAL-GZ 992/3 Linen from Hotels, Restaurants, Catering and Food Processing Businesses					
Limit values		Threshold values		Guide values	
Scope/ location	Permissible colony forming units (CFU)	Scope/ location	Permissible colony forming units (CFU)	Scope/ location	Permissible colony forming units (CFU)
Dry linen	9 out of 10 samples not more than 50 CFU/1 dm ²	Humid linen	100 CFU/1 dm ²	Technical facilities	100 CFU/1 dm ²
Bioindicator	must be killed	Raw water	100 CFU/1 ml	Transport storage	100 CFU/1 dm ²
---	---	Water after softening	100 CFU/1 ml	Hand hygiene	100 CFU/1 dm ²
---	---	Soft water rinsing pro- cess	100 CFU/1 ml	Soft water prewash	1000 CFU/1 ml

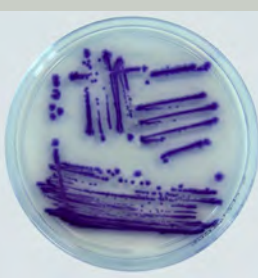
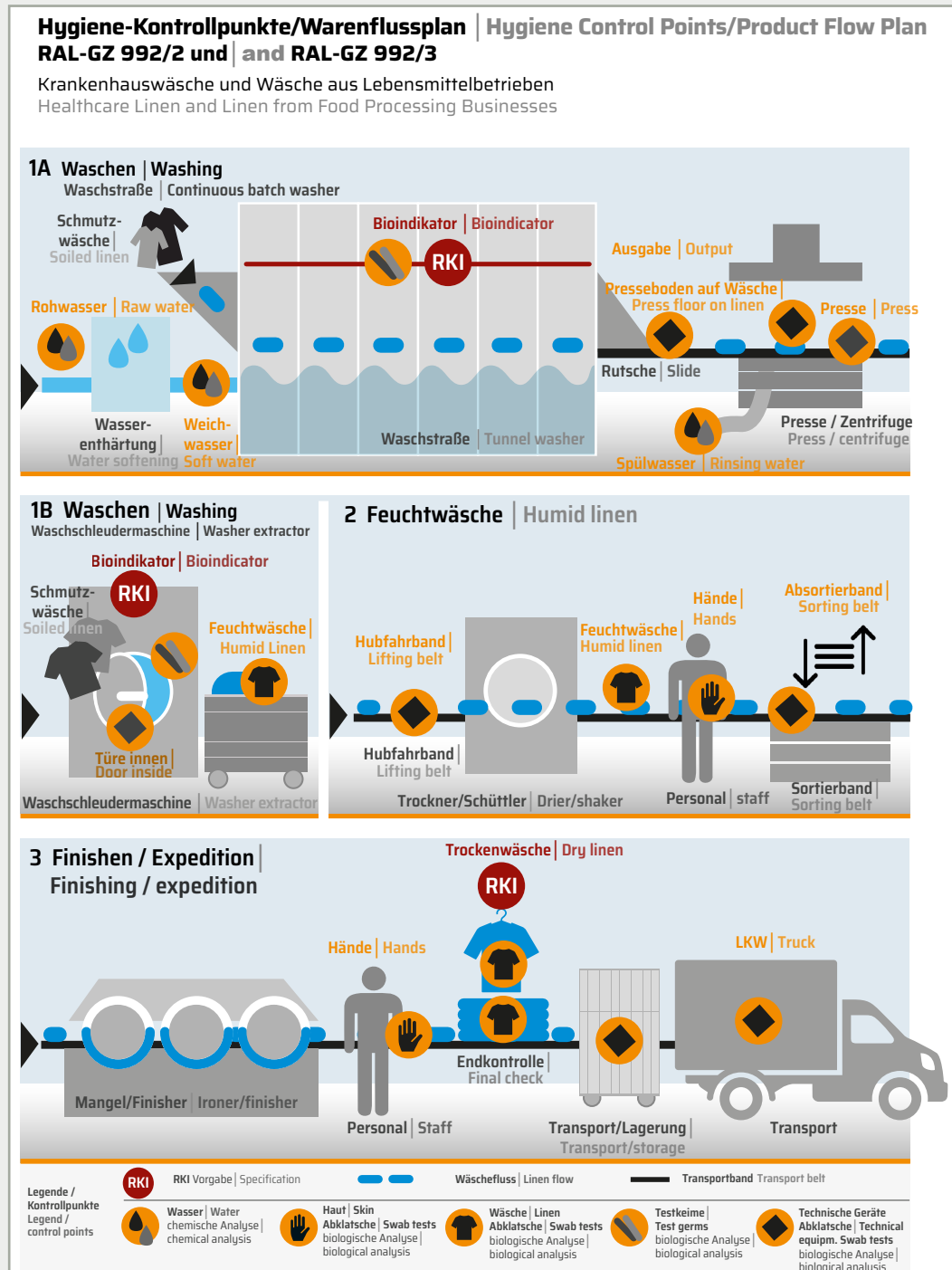


Chart 8 Locations for microbiological tests with bio indicators and RODAC contact plates



Corrective action in case of non-compliance as per paragraph 9.

Specimen of the Award Certificate of RAL-GZ 992/3 Linen from Hotels, Restaurants, Catering and from Food Processing Businesses



The image shows a specimen of an Award Certificate for RAL-GZ 992/3 Linen. The certificate has a header with a green and grey abstract design and the RAL GÜTEZEICHEN logo. The main title 'AWARD CERTIFICATE' is prominently displayed. The text explains that the German Certification Association for Professional Textile Services awards the Quality Mark RAL-GZ 992/3 Linen from Food Processing Businesses. The recipient is Mustermann Wäscherei, Musterstraße 10, 12345 Musterstadt, MUSTERLAND. The certificate is for 'Linen from Food Processing Businesses' and mentions that the use of the quality mark demands compliance with the Quality and Test Regulations RAL-GZ 992/3. It is dated Bönningheim, 1 January 2020, and is signed by Holger Großmann (The President) and Dr. Timo Hammer (The Managing Director). The footer identifies the issuing organization as GÜTEGEMEINSCHAFT SACHGEMÄSSE WÄSCHEPFLEGE E.V. in Bönningheim, Germany.

**AWARD
CERTIFICATE**

The German Certification Association for Professional Textile Services hereby awards the Quality Mark RAL-GZ 992/3 Linen from Food Processing Businesses recognized by the RAL Official German Institute for Quality Assurance and Certification and protected under the trademark law by registration with the German Patent Office.

**Mustermann
Wäscherei
Musterstraße 10
12345 Musterstadt
MUSTERLAND**

Linen from Food Processing Businesses
RAL Quality Mark RAL-GZ 992/3

The use of the quality mark demands that the compliance with the Quality and Test Regulations RAL-GZ 992/3 is controlled.

Bönningheim, 1 January 2020


Holger Großmann · The President


Dr. Timo Hammer · The Managing Director

GÜTEGEMEINSCHAFT SACHGEMÄSSE WÄSCHEPFLEGE E.V. · 74357 BÖNNIGHEIM · GERMANY

Specimen of the Hygiene Certificate of RAL-GZ 992/3 Linen from Hotels, Restaurants, Catering and from Food Processing Businesses



The image shows a specimen of a RAL Hygiene Certificate for Linen from Food Processing Businesses. The certificate is titled "HYGIENE CERTIFICATE" in large green letters. Below the title, it specifies "Linen from Food Processing Businesses" and "RAL Quality Mark RAL-GZ 992/3". The certificate is awarded to "Mustermann Wäscherei" at "Musterstraße 10, 12345 Musterstadt". It states that the certificate is valid from 1 January 2020 to 31 December 2020. The certificate is signed by "Holger Großmann" (The President) and "Dr. Timo Hammer" (The Managing Director). The RAL logo is visible in the top right corner of the certificate. A large "EXAMPLE" watermark is diagonally across the center of the certificate.

HYGIENE CERTIFICATE

Linen from Food Processing Businesses
RAL Quality Mark RAL-GZ 992/3

As a result of the textile, microbiological and hygiene tests specified by the RAL German Institute for Quality Assurance and Certification and executed by Hohenstein Laboratories, the RAL Hygiene Certificate "Linen from Food Processing Businesses" RAL-GZ 992/3 is being awarded to the textile services company

**Mustermann
Wäscherei
Musterstraße 10
12345 Musterstadt**

as evidence that the requirements according to RAL-GZ 992/3:2019 have been fulfilled.

The RAL Hygiene Certificate is valid for the time period stated below, provided that no deficiencies in quality assurance occur within this period. The certificate may be used during its award period in advertising, as an appendix to bids and in order negotiations etc. Advertising only displaying the words "RAL Hygiene Certificate" on envelopes, vehicles and other similar advertising materials is not permitted.

Valid from 1 January 2020 to 31 December 2020


Holger Großmann · The President


Dr. Timo Hammer · The Managing Director

GÜTEGEMEINSCHAFT SACHGEMÄSSE WÄSCHEPFLEGE E.V. · 74357 BÖNNIGHEIM · GERMANY

Specimen of the Certificate as proof of compliance with DIN EN 14065, IFS and BRC



CERTIFICATE
HYGIENE MANAGEMENT
LINEN FROM FOOD PROCESSING BUSINESSES

The below mentioned company

**Mustermann
Wäscherei
Musterstraße 10
12345 Musterstadt**

has a hygiene management system for the processing of linen from food processing businesses, which conforms to the European standard

DIN EN 14065:2016
**Textiles – Textiles processed in Industrial Laundries –
Biocontamination Control System**
(Risk Analysis and Biocontamination Control System · RABC)

This ensures that the microbiological quality of the textiles is maintained during processing. This hygiene management system can be integrated into the hygiene assurance concept HACCP and the foodstuff and hygiene regulation. This also includes the compliance with the minimum requirements for linen according to the International Featured Standard-Food* and the Global Safety Standard for Food Products of the British Retail Consortium**. The Hohenstein Laboratories GmbH & Co. KG are accredited for testing according to DIN EN ISO/IEC 17020:2012.

*IFS Version 6.1, Section 3.2.2.5 and 3.2.2.6 ** BRC Version 8, Section 7.4.3

Valid from 1 January 2020 to 31 December 2020


Dr. Timo Hammer
Managing Director

HOHENSTEIN LABORATORIES GMBH & CO. KG · Schlosssteige 1 · 74357 BÖNNIGHEIM · GERMANY

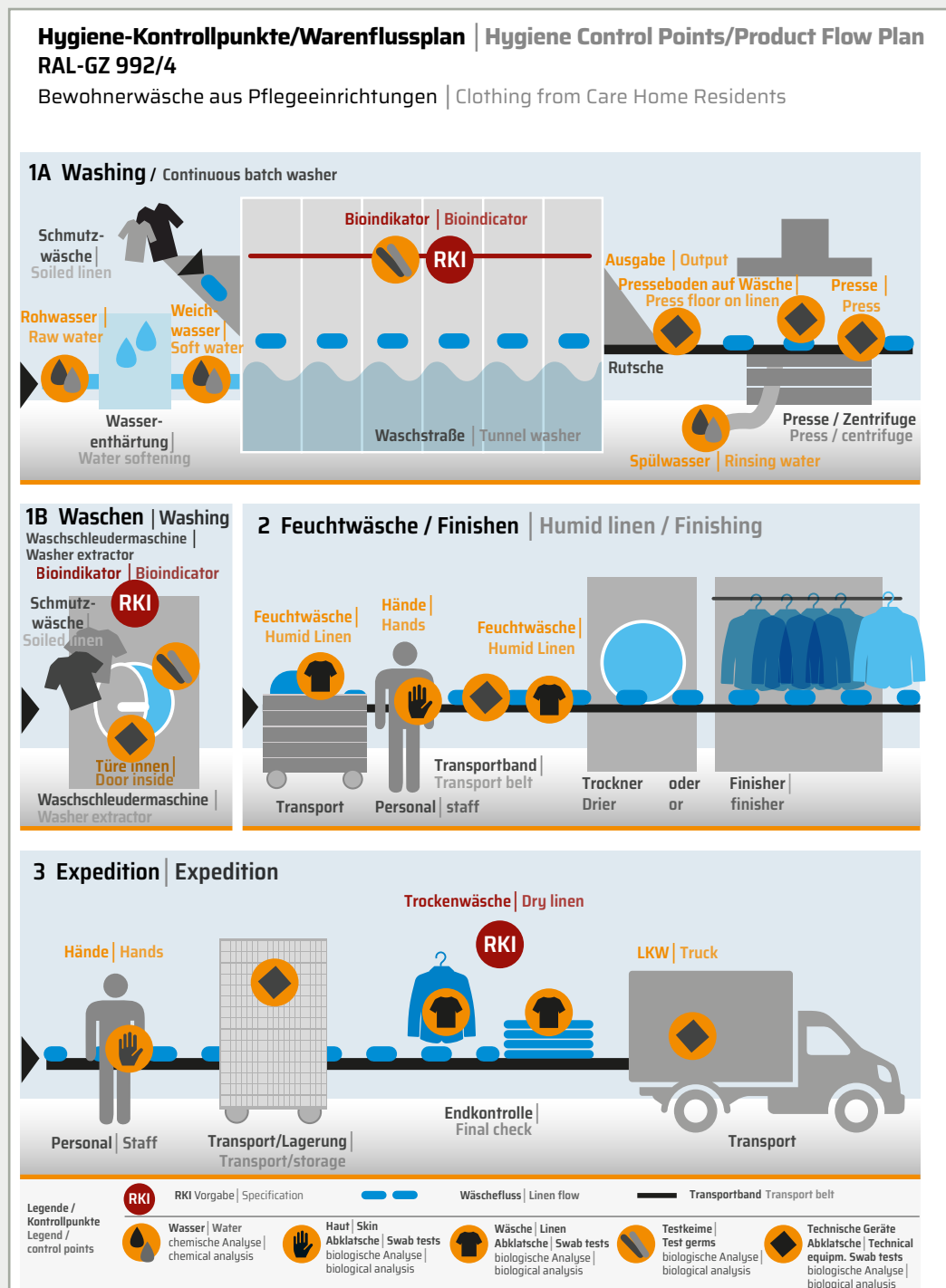
RAL-GZ 992/4 CLOTHING OF CARE HOME RESIDENTS

1. The application form for audit and certification according to RAL-GZ 992/4 must be completed, duly signed and returned to the Certification Association. With the application the applicant also accepts the annual revalidation and quality maintenance service programme.
2. Initial audits: Within a period of 6 months the laundry has to prove that all the laundry processes are in compliance with the RAL Test and Quality Regulations:
 - 2.1 Washing of Hohenstein standard cotton and wool test fabrics to determine the secondary washing effect. (The fabrics are sent by Hohenstein with requested date of return)
 - 2.2 The Inspection Record Book according to RAL-GZ 992 needs to be kept and must be completed from receipt of the confirmation and first test fabric.
 - 2.3 The laundry has to nominate and train a hygienist and a textile expert from the initial award of the hygiene certificate. Corresponding seminars are offered by the Hohenstein Academy.
 - 2.4 When processing textiles from care homes where also hospital linen and linen from food processing businesses is treated the user of the Quality Mark has to prove that the technical content of the RAL-GZ 992/2 (Healthcare Linen) and/or RAL-GZ 992/3 (Linen from Food Processing Businesses) Quality and Test Regulations is kept.
 - 2.5 The audit and hygiene control are carried out by a Hohenstein expert. The RAL-GZ 992/4 certificate will be issued if the Hohenstein expert's findings are in compliance with the RAL-GZ 992/4. (Checkpoints for microbiological hygiene testing and requirements as per the next page).

Chart 9

Type of Linen	Set of bioindicator acc. to RAL-GZ 992/2		RODAC (swab tests)
	Bacterial reduction	No.	Dry Linen
Underwear	5 log	2 x 5 germ carrier cloths	20 CFU/dm ² complies with RAL-GZ 992/2
Washable outerwear	5 log	2 x 5 germ carrier cloths	50 CFU/dm ² complies with RAL-GZ 992/3
Non-washable outerwear	No testing possible in solvent	n/a	50 CFU/dm ² complies with RAL-GZ 992/3

Chart 10 Locations for microbiological tests with bio indicators and RODAC contact plates



3. The RAL-GZ 992/4 certificates will be issued if the Hohenstein expert's findings and the test fabrics are in compliance with the RAL-GZ 992/4 regulations.

„Professional Textile Services for Clothing of Care Home Residents“,

- Award Certificate
- RAL Hygiene Certificate for the remaining calendar year



4. The revalidation and permanent quality control service programme is done by a Hohenstein expert on a yearly basis according to the RAL-GZ 992/4 test regulations.
The permanent quality control system comprises the processing of test fabrics as early warning system for processing problems which could lead to linen damage with the consequence of a reduced linen life.

4.1 Process indicators (test strips) per year

Tons of processed linen per day	Outerwear Wool wash 40°C Test fabrics made of wool (1 set with 3 pieces)	Underwear Disinfecting washing process according to RAL-GZ 992/2 Standard cotton fabric
up to 1	2	1
up to 2	2	2
up to 3	2	3
up to 4	2	4
up to 5	2	6
up to 7	2	7
up to 20	2	8
≥ 20	2	10

If all tests and audits are in compliance with the RAL-GZ 992 regulations, the RAL certificate will be issued with a validity of 1 calendar year.



Specimen of the Award Certificate according to RAL-GZ 992/4
Clothing of Care Home Residents



The image shows a specimen of an Award Certificate for RAL-GZ 992/4 Clothing of Care Home Residents. The certificate features a header with the RAL GÜTEZEICHEN logo and a background image of a washing machine drum. The main text reads: 'AWARD CERTIFICATE'. Below this, it states: 'The German Certification Association for Professional Textile Services hereby awards the Quality Mark RAL-GZ 992/4 Clothing from Care Home Residents recognized by the RAL Official German Institute for Quality Assurance and Certification and protected under the trademark law by registration with the German Patent Office.' The recipient's details are: 'Mustermann Wäscherei, Musterstraße 10, 12345 Musterstadt, MUSTERLAND'. The awarded item is 'Clothing of Care Home Residents' with the RAL Quality Mark RAL-GZ 992/4. A note states: 'The use of the quality mark demands that the compliance with the Quality and Test Regulations RAL-GZ 992/4 is controlled.' The date is 'Boennigheim, 1 January 2020'. There are two signatures: 'Holger Großmann' (The President) and 'Timo Hammer' (The Managing Director). The footer reads: 'GÜTEGEMEINSCHAFT SACHGEMÄSSE WÄSCHEPFLEGE E.V. · 74357 BÖNNIGHEIM · GERMANY'.

**AWARD
CERTIFICATE**

The German Certification Association for Professional Textile Services hereby awards the Quality Mark RAL-GZ 992/4 Clothing from Care Home Residents recognized by the RAL Official German Institute for Quality Assurance and Certification and protected under the trademark law by registration with the German Patent Office.

**Mustermann
Wäscherei
Musterstraße 10
12345 Musterstadt
MUSTERLAND**

Clothing of Care Home Residents
RAL Quality Mark RAL-GZ 992/4

The use of the quality mark demands that the compliance with the Quality and Test Regulations RAL-GZ 992/4 is controlled.

Boennigheim, 1 January 2020


Holger Großmann · 1. The President


Dr. Timo Hammer · The Managing Director

GÜTEGEMEINSCHAFT SACHGEMÄSSE WÄSCHEPFLEGE E.V. · 74357 BÖNNIGHEIM · GERMANY

Specimen of the Hygiene Certificate according to RAL-GZ 992/4
Clothing of Care Home Residents



HYGIENE CERTIFICATE

Clothing of Care Home Residents

RAL Quality Mark RAL-GZ 992/4

As a result of the textile, microbiological and hygiene tests specified by the RAL German Institute for Quality Assurance and Certification and executed by Hohenstein Laboratories, the RAL Hygiene Certificate "Clothing of Care Home Residents" RAL-GZ 992/4 is being awarded to the textile services company

**Mustermann
Wäscherei
Musterstraße 10
12345 Musterstadt**

as evidence that the requirements according to RAL-GZ 992/4:2019 have been fulfilled.

The RAL Hygiene Certificate is valid for the time period stated below, provided that no deficiencies in quality assurance occur within this period. The certificate may be used during its award period in advertising, as an appendix to bids and in order negotiations etc. Advertising only displaying the words "RAL Hygiene Certificate" on envelopes, vehicles and other similar advertising materials is not permitted.

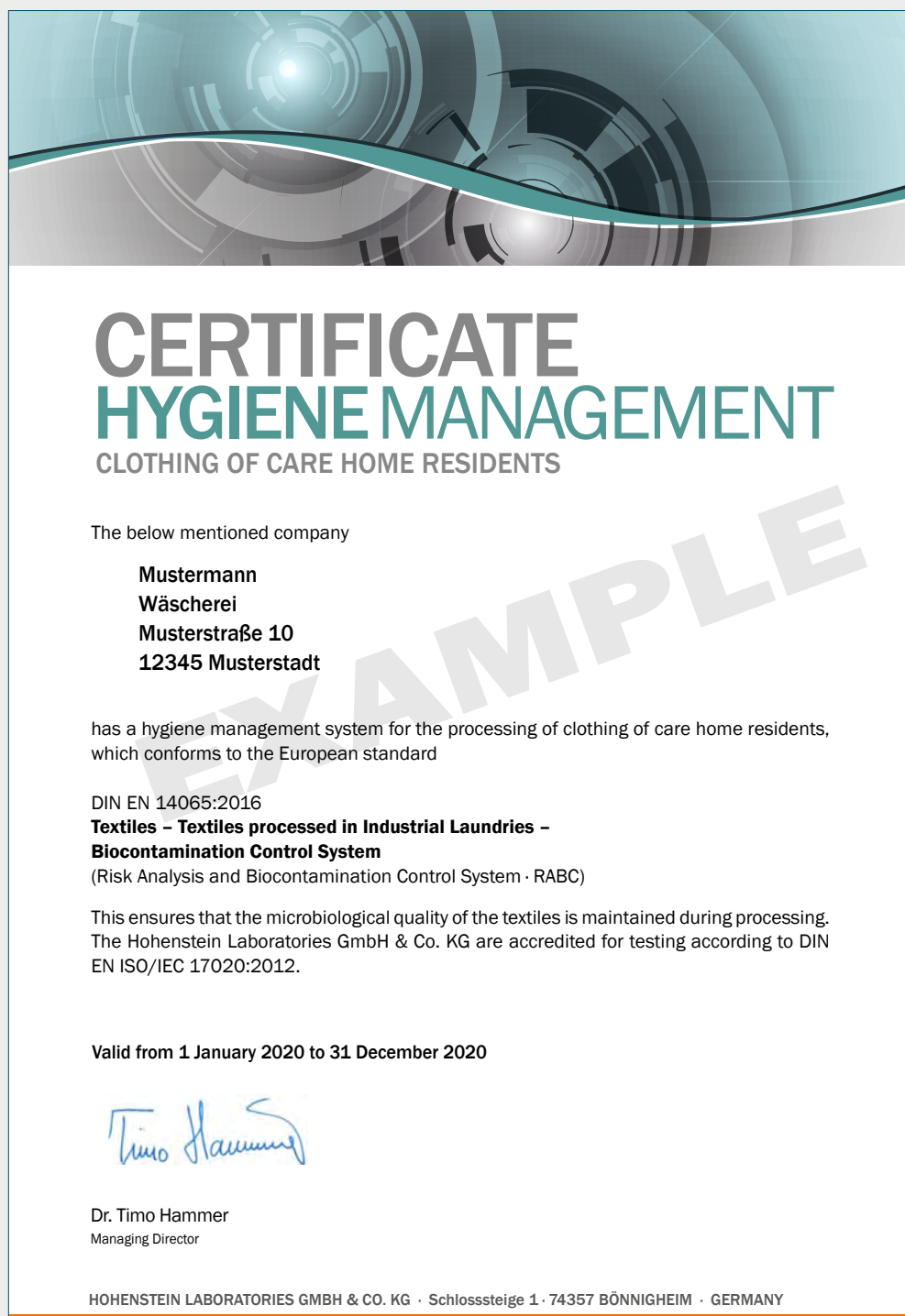
Valid from 1 January 2020 to 31 December 2020


Holger Großmann · The President


Dr. Timo Hammer · The Managing Director

GÜTEGEMEINSCHAFT SACHGEMÄSSE WÄSCHEPFLEGE E.V. · 74357 BÖNNIGHEIM · GERMANY

Specimen of the Certificate as proof of compliance with DIN EN 14065



CERTIFICATE
HYGIENE MANAGEMENT
CLOTHING OF CARE HOME RESIDENTS

The below mentioned company

**Mustermann
Wäscherei
Musterstraße 10
12345 Musterstadt**

has a hygiene management system for the processing of clothing of care home residents,
which conforms to the European standard

DIN EN 14065:2016
**Textiles – Textiles processed in Industrial Laundries –
Biocontamination Control System**
(Risk Analysis and Biocontamination Control System · RABC)

This ensures that the microbiological quality of the textiles is maintained during processing.
The Hohenstein Laboratories GmbH & Co. KG are accredited for testing according to DIN
EN ISO/IEC 17020:2012.

Valid from 1 January 2020 to 31 December 2020



Dr. Timo Hammer
Managing Director

HOHENSTEIN LABORATORIES GMBH & CO. KG · Schlosssteige 1 · 74357 BÖNNIGHEIM · GERMANY

APPENDIX TO THE ACCREDITATION GUIDE



Quality · Hygiene · Safety · Sustainability

EDITION 2020

GÜTEGEMEINSCHAFT SACHGEMÄSSE WÄSCHEPFLEGE E.V.
[GERMAN CERTIFICATION ASSOCIATION FOR PROFESSIONAL TEXTILE SERVICES]
Managing Director: Dr. Timo Hammer · Schloss Hohenstein · D-74357 Boennigheim
Telephone: +49 7143-271-562 · Fax: +49 7143-271-51 · Internet: www.ral-laundry.com

RAL GZ 992 Regulations Summary

	RAL-GZ 992/1	RAL-GZ 992/3	RAL-GZ 992/2
Time frame	Audit and award during 1 visit	Can be done together with 992/1 during 1 visit	3 months after award of 992/1 at the earliest
Clean and soil areas	Physical separation between soiled linen area and clean linen area as far as possible	The area for soiled linen processing has to be separated from the clean linen area with suitable structural or air-conditioning measures. Barrier separation is not required. Barrier washing equipment is not required.	Barrier wall between soiled linen area and clean linen area. Airlocks for personnel and sluices for disinfection of containers. Washing equipment needs to be of barrier type. Forced air flow from clean area to soil area.
Entry logistic for soil linen	Receiving and storing in dry condition	Receiving in suitable transport containers such as bags, containers etc. Storing should not exceed 72 hours	Receiving in leak proof, robust and closed receptacles.
Sorting	Sorting of soiled linen to suit washing processes	Sorting of soiled linen to suit washing processes	Sorting of soiled linen not allowed. Removing of objects not suitable for washing processes is allowed, provided adequate protection measures for staff are taken, e.g. mouth protection, aeration of sorting tables.
Staff facilities	--	Adequate staff facilities and changing rooms, facilities for hand hygiene	Adequate staff facilities, recreation and changing rooms, facilities for hand hygiene. Separate toilets for male and female.
Hygienist and hygiene plans	1 qualified and experienced person responsible for supervision and compliance with all technical procedures	1 qualified and experienced person responsible for supervision and compliance with all technical procedures. One qualified person for hygiene	Trained hygiene supervisors and hygiene plan

	RAL-GZ 992/1		RAL-GZ 992/3		RAL-GZ 992/2	
Process requirements	Acknowledged washing processes		Disinfecting washing processes		Strict adherence to: RKI list of disinfectants and disinfection washing processes, tested and approved by RKI RKI guidelines* ¹ DGHM list* ² IfSG* ³ Guide Line for Hospital Linen* ⁴	
Water requirements for process water	Hardness	0 mmol/l Ca (0 hardness)	Hardness	0 mmol/l Ca (0 hardness)	Hardness	0 mmol/l Ca (0 hardness)
	Iron	< 0.01 mg/l	Iron	< 0.01 mg/l	Iron	< 0.01 mg/l
	Manganese	< 0.03 mg/l	Manganese	< 0.03 mg/l	Manganese	< 0.03 mg/l
	Copper	< 0.05 mg/l	Copper	< 0.05 mg/l	Copper	< 0.05 mg/l
Microbiological water requirements	--		Raw water, process water	100 CFU/1 ml	Raw water, process water Drinking quality for rinsing water	100 CFU/1 ml
Test fabrics	As initial proof of process management for applicants:		As initial proof of process management for applicants:		As initial proof of process management for applicants:	
	2 test fabrics have to be washed 50 times in the same wash formula. For quality management repetitive processing of test fabrics according to tonnage		Test fabrics have to be processed 25 times in same washing formula. For quality management repetitive processing of test fabrics according to tonnage		Test fabrics have to be processed 50 times in same washing formula. For quality management repetitive processing of test fabrics according to tonnage	

	RAL-GZ 992/1 after 50 washing cycles		RAL-GZ 992/3 after 25 washing cycles		RAL-GZ 992/2 after 50 washing cycles	
Criteria for secondary washing effect	Chemical damage	< 1.0	Chemical damage	< 1.0	Chemical damage	< 1.0
	Tensile strength loss	< 30%	Tensile strength loss	< 30%	Tensile strength loss	< 30%
	Inorganic encrustations	< 1%	Inorganic encrustations	< 1%	Inorganic encrustations	< 1%
	Color deviation CDN	max R 1.5 to max G 2.49	Color deviation CDN	max R 1.5 to max G 2.49	Color deviation CDN	max R 1.5 to max G 2.49
	Basic White value (Y)	> 87	Basic White value (Y)	> 87	Basic White value (Y)	> 87
	Degree of whiteness (DW value)	> 170	Degree of whiteness (DW value) >170	> 170	Degree of whiteness (DW value) >170	> 170
					Microbiological test of surface or fountain water	
Surface contact tests	--	--	Microbiological tests at 27 control points with RODAC dishes.		Microbiological tests at 27 control points with RODAC dishes.	
Bio indicators	--	-	Staphylococcus Aureus Enterococcus Faecium (Carrier with sheepsblood inoculated with life bacteria log 10 ⁵)		Staphylococcus Aureus Enterococcus Faecium (Carrier with sheepsblood inoculated with life bacteria log 10 ⁵)	

	RAL-GZ 992/1	RAL-GZ 992/3	RAL-GZ 992/2
Clean linen	--	9 out of 10 samples not more than 5 CFU/10 cm ² .	9 out of 10 samples not more than 2 CFU/10 cm ²
Storing of clean linen	Storage area must be clearly laid out. Facilities must be well maintained, neat and clean	Storage area must be clearly laid out. Facilities must be well maintained, neat and clean. Facilities must indicate high level of order and cleanliness.	Storage area must be clearly laid out. Facilities must be well maintained, neat and clean. Facilities must indicate high level of order and cleanliness. The clean linen must always be almost free of any microbial contamination when packed for storing.
Logistics	Cargo hold of transport vehicles must be clean and fully closed	Cargo hold of transport vehicles must be clean and fully closed. Disinfection of cargo hold required when vehicle is used for clean and soiled linen.	Cargo hold of transport vehicles must be clean and fully closed. Disinfection of cargo hold required when vehicle is used for clean and soiled linen.
Hygiene state of plant	Laundry must be in an orderly state and well organized. Floors, ceilings walls and surfaces must be clean	Laundry must be in an orderly state and well organized. Floors, ceilings walls and surfaces must be clean	Laundry must be in an orderly state and well organized. Floors, ceilings walls and surfaces must be clean

	RAL-GZ 992/1	RAL-GZ 992/3	RAL-GZ 992/2
Self control	Inhouse monitoring and recording by an employee	--	--
	State of finished linen	--	--
	Plant layout	--	--
	Receiving/Storing/Sorting	--	----
	Water treatment/quality	--	--
	Equipment check and others	--	--

For detailed regulations please consult the RAL-GZ 992 Quality and Test Regulations, edition 2019.

Foot notes:

^{*1} RKI (Robert-Koch-Institut)

^{*2} DGMH (Disinfection Commission of the German Society for Hygiene and Microbiology)

^{*3} IfSG (Law for the prevention and control of diseases contagious to human beings)

^{*4} Richtlinie Krankenhauswäsche (Guideline for healthcare linen)