

RAL QUALITY CERTIFICATION MARK



RAL-GZ 992 PROFESSIONAL TEXTILE SERVICES

Gütegemeinschaft sachgemäße Wäschepflege e.V.



RAL Quality Certification Mark 992

The safety of a professional laundry service

Since 1953, the German Certification Association for Professional Textile Services has been an organisation for commercial laundries which have particularly committed themselves, based on the services they offer, to maintaining high quality standards. Membership of the Certification Association and participation in its monitoring system are the requirements for obtaining one of the coveted RAL-GZ 992 quality marks for professional textile services.



The approximately 380 member companies in the German Certification Association meet the highest standards for their customers from many different sectors. Highly qualified employees and modern equipment guarantee outstanding quality as well as extremely efficient and environmentally-friendly textile processing in accordance with all normative standards for the relevant areas of application. Compliance with the strict RAL Quality Certification Mark requirements is regularly monitored by the independent Hohenstein Institute.

All RAL certified laundries have a highly efficient self-monitoring system which is regularly checked on site to ensure that it is up-to-date and applied correctly. Obligatory further training for employees ensures that technological advances are properly implemented.



RAL and its Quality Certification Marks

Vouching for hygiene and quality

RAL quality certification marks may only be created for product types and service categories.

Only one quality mark is permitted within each product type or service category. RAL quality certification marks are collective marks and are registered with the German Patent and Trademark Office. They are awarded to manufacturers and service providers by the RAL German Institute for Quality Assurance and Certification through recognised German Certification Associations. Manufacturers and service providers must abide by strictly defined quality and test regulations. The purpose of the regulations is quality assurance, i.e. they ensure the high quality of products and services which are subject to continuous neutral monitoring.

Neutrality of interests is an absolute imperative at RAL. This applies not only to quality control but also to the structure of its committees. At RAL there is not only a member



assembly and an executive board but also a board of trustees. Important social groups are represented in these bodies. These include representatives of federal ministries, government departments and leading business and industrial associations. There are also four ordinary members (RAL quality certification associations) who are each elected for a four year term. This body determines the guidelines for the RAL activities.



www.ral.de

RAL Board of Trustees

Composition

- ▶ Federal Ministry of Justice
- ▶ Federal Ministry of Food, Agriculture and Consumer Protection
- ▶ Federal Ministry of Economics and Technology
- ▶ Federation of German Industry (BDI)
- ▶ Federation of German Wholesale and Foreign Trade (BGA)
- ▶ Federal Organisation of Municipal Central Associations (German Association of Cities)
- ▶ President of the Federal Institute for Materials Research and Testing (BAM)
- ▶ President of the German Institute for Construction Technology (DIBt)
- ▶ President of the German Patent and Trademark Office
- ▶ German Agricultural Society (DLG)
- ▶ German Confederation of Trade Unions (DGB)
- ▶ Association of German Chambers of Trades and Crafts (DHKT)
- ▶ Association of German Chambers of Industry and Commerce (DIHK)
- ▶ German Packaging Institute (DVI)
- ▶ DIN CERTCO Association for Conformity Assessment
- ▶ Trade Association Germany (HDE)
- ▶ Centre for Rationalisation and Innovation in the German Economy (RKW)
- ▶ Association of the Chambers of Agriculture (VLK)
- ▶ Federation of German Consumer Organisations (vzbv)
- ▶ Four ordinary RAL members who are elected by the member assembly for a term of 4 years
- ▶ Central Association of German Skilled Craftsmen (ZDH)

The balanced structure of the board of trustees ensures the neutrality of RAL. It consists of representatives of 15 leading business and industrial associations, four federal ministries, three government departments as well as ordinary RAL members who are elected by the member assembly for a term of four years (www.ral-guetezeichen.de/kuratorium.html).

RAL quality certification marks are awarded by the Certification Associations which monitor compliance with the quality requirements. Unlike conformity or safety marks such as the CE or GS marks, documentation relating to continuity and neutral monitoring is available to the general public.



Making a mark for hygiene and quality

Neutral monitoring through the Hohenstein Institute

The independent and internationally renowned Hohenstein Institute in Bönningheim carries out the external audits in the member companies on behalf of the German Certification Association for Professional Textile Services. The audits monitor continuing compliance with the strict specifications for the RAL Quality Certification Mark RAL-GZ 992.

Members of the German Certification Association also receive regular information about the latest developments and solutions in the field of textile services through the "Hohenstein Laundry Information", in presentations at the annual Certification Association conference as well as in seminars and training events.

Members of the German Certification Association benefit from the broad spectrum of work areas of the Hohenstein Institute, which enable interdisciplinary solutions for specialist problems to be found:

- ▶ Clothing physiology (quantitative measurement and evaluation of the comfort of textiles and clothing)
- ▶ Development and testing of functional textiles, also for textile rental services
- ▶ Development and testing of medical and hospital textiles
- ▶ Textile hygiene and textile health protection
- ▶ Colour measurement and whiteness assessment
- ▶ Material and quality testing
- ▶ Commercial textile care and textile rental services: Development of energy-saving washing procedures, improved hygiene safety, optimised quality controls, resource-conserving processing methods, longer durability of textiles, and ecological assessment procedures proven in practice.
- ▶ Textile personal protective equipment (PPE)
- ▶ Conducting and evaluating sizing surveys
- ▶ Comparative tests (consumer goods testing)

Washing is far more than just removing dirt from textiles. Today, ecological considerations have to be taken into account as well as hygiene requirements and an optimum maintenance of value. For RAL certified laundries this means continuing development in terms of technology as well as specialist expertise. The employees are particularly important in this process. Regular training courses and consistent monitoring of learning success have become an integral part of quality management of the German Certification Association.

The Hohenstein Institute helps the laundries by providing reliable information and

organising subject-specific seminars. Each quality mark has its own specific instructions regarding internal and external training.

On matters regarding textiles, the RAL certified laundries also benefit from the extensive and long-standing experience of the Hohenstein scientists. Their interdisciplinary work enables them to advise laundries which are part of the German Certification Association on important matters relating to textile hygiene, environmentally-friendly processing and economic efficiency. Another important component of the neutral monitoring by the Hohenstein Institute is advice on quality and help with specific problems.

The RAL Quality Certification Mark 992 is the only system worldwide for quality assurance in commercial laundries with clear regulations regarding quality and the respective hygienic requirements. Accordingly there are now RAL certified laundries located far beyond the German-speaking countries in more than 15 countries in Europe and Asia. Interesting approaches for operational improvements can be found based on the international knowledge transfer resulting from this and the comparison between test results from individual countries. The Hohenstein Institute as the scientific partner of the German Certification Association for Professional Textile Services also processes this information for the benefit of the laundries and communicates it via different channels such as the regularly published "Hohenstein Laundry Information" or in the framework of an annual specialist conference.

RAL certified laundries therefore receive every conceivable support for offering their customers with high-quality service at a fair price.





Keeping an eye on quality

Consistent quality assurance

The quality and test regulations for the RAL-GZ Quality Certification Mark 992 for professional textiles services are contained in an extensive document. All RAL certified laundries must comply with the criteria and conditions described therein.

Internal audits

The RAL certified laundries have to introduce a quality management system and use continuous internal monitoring to document that their products and services always meet the requirements of quality assurance. For example, the process water must be tested every day and the quality of the finished laundry must regularly be inspected by persons outside of the production area using checklists. The in-house checking of finished laundry comprises cleanliness and stain removal, whiteness quality, drying, ironing, finishing effects, laying out and folding, fragrance and packaging. The result of each test is fully documented in writing in the Certification Association's inspection record book which is checked by an external auditor in the framework of external monitoring.

External audits

External monitoring of RAL certified laundries applies to the washing procedures and all business procedures as well as hygiene in the company. Since 1959 the external audits of laundries with the RAL Quality Certification Mark have been carried out by the independent Hohenstein Institute. They comprise regular inspections of the washing cycle controls using test fabrics and an annual site inspection.





Washing cycle controls

Depending on the size of the laundry business the RAL certified laundries receive between one and eight standardised pieces of cotton fabric which are washed 25 (RAL-GZ 992/3) or 50 times (RAL-GZ 992/1, 992/2, 992/4) and then returned to the Hohenstein Institute. Their laboratory then tests and evaluates the technological and chemical quality. An additional wool test fabric is used for testing the wool wash process within the framework of the RAL Quality Certification Mark 992/4.

The **strength of the fabrics** is reduced in the course of its service life, partly due to repeated processing. However, due to optimised washing technologies, tear strength reduction is now very slight and the RAL certified laundries are well within the tolerance stipulated by the regulations.

Even in commercial laundries, **chemical damage** as a result of repeated processing cannot be completely eliminated. This is caused in particular by bleaching substances which are used for stain removal and which aid hygiene in the washing process. During each washing cycle, they slightly change the quality of the fibres, so the overall effect on the test pieces can be calculated after 25 or 50 washing cycles.

RAL certified laundries are obliged to use only softened water for washing. This eliminates the possibility of



inorganic residues which may occur when hardening chemicals in the water or calcium salts in the dirt combine with the detergent. The tests carried out on the test fabrics ensure that no undetected faults can appear in the water softening system.

Three different measurements of **whiteness appearance** are taken, first of all to check the impression formed by the human eye when looking at the test fabric. Secondly this checks for any invisible greying which has been "masked" by optical brighteners. Finally it is tested whether the laundry was correctly sorted by colour.

Medical textiles require **special treatment** in laundries. Textiles for operating theatres for example often feature a water and oil repellent fluorocarbon resin finish. This increases the barrier effect of surgical cloths or surgical gowns against germs and body fluids, protecting patients and hospital staff at the same time. The quality of these treatments is also regularly tested using special test fabrics.



Site inspections

The quality and test regulations stipulate verification of the work procedures and processes in the RAL certified laundries as well as of the entire quality management system by an expert in the framework of an annual visit. First of all, the extensive test catalogue contains the evaluation of building and technical condition such as the strict separation



of the "unclean" area, i.e. the part of the building where the dirty laundry is delivered and where the machines are loaded, from the "clean" area where the textiles are removed and processed. It is also important that a hygiene plan and all the required equipment is in place and that regulations for personal hygiene are observed. In addition, all areas of the laundry processing chain are inspected. During the site inspection, the expert from the Hohenstein Institute also examines the inspection record book listing all results from internal audits.

The auditors carry out additional hygiene checks in laundries processing healthcare linen, linen from food processing businesses and from homes for the elderly and nursing homes. For example, the disinfectant action of the washing procedures is tested using bioindicators. The hygienic state of the machines, the technical equipment, the vehicle pool and the employees' hands is checked using microbiological surface swabs on Rodac plates which are tested in the laboratory afterwards. The same applies to the water samples taken by the expert at different locations in the facility. The site inspection is considered passed only if all test items yield no distinctive irregularities. If this is not the case, corrective measures must be taken and the inspection may have to be repeated.





Hygiene inspections

The member companies of the German Certification Association for Professional Textile Services are supported by the Institute for Hygiene, Environment and Medicine at the Hohenstein Institute.

In addition to testing the microbiological purity of the linen, the hygiene of the technical equipment in the companies is also tested using surface contact cultures. The effect of disinfectant washing procedures can be tested using the accredited production of

bioindicators on the bactericidal and virucidal impact. For the detergent industry Hohenstein Institute compiles the necessary expert reports for listings of disinfectant washing procedures and assists them in their customer-support work.

The requirements for the hygienic quality are set by the Quality Control Committee of the Certification Association, based on the stipulations of the Robert Koch-Institute.

RAL-GZ 992

Overview of microbiological hygienic requirements

Microbiological values (permitted colony forming units, CFU)

LIMIT VALUES	RAL-GZ 992/2 Healthcare linen	RAL-GZ 992/3 Linen from food processing businesses	RAL-GZ 992/4 Clothing of Care Home Residents
Dry linen	9 out of 10 samples no more than 20 CFU / 1 dm ² ¹⁾	9 out of 10 samples no more than 50 CFU / 1 dm ² ¹⁾	10 out of 12 samples, including 5 items of underclothes with no more than 20 CFU / 1 dm ² and 7 items of clothing (5 washable and 2 not washable) with no more than 50 CFU / 1 dm ²
Bioindicators	must be killed	must be killed	must be killed
THRESHOLD VALUES	RAL-GZ 992/2	RAL-GZ 992/3	RAL-GZ 992/4
Moist linen	30 CFU / 1 dm ²	100 CFU / 1 dm ²	• Underclothes: 30 CFU / 1 dm ² • Clothing: 100 CFU / 1 dm ²
Hard / untreated water	100 CFU / 1 ml	100 CFU / 1 ml	100 CFU / 1 ml
Water after softening	100 CFU / 1 ml	100 CFU / 1 ml	100 CFU / 1 ml
Extracting / rinsing processes	100 CFU / 1 ml	100 CFU / 1 ml	100 CFU / 1 ml
GUIDE VALUES	RAL-GZ 992/2	RAL-GZ 992/3	RAL-GZ 992/4
Technical equipment	100 CFU / 1 dm ²	100 CFU / 1 dm ²	100 CFU / 1 dm ²
Storage	100 CFU / 1 dm ²	100 CFU / 1 dm ²	100 CFU / 1 dm ²
Hand hygiene	100 CFU / 1 dm ²	100 CFU / 1 dm ²	100 CFU / 1 dm ²
Extracting water / pre-wash area	1000 CFU / 1 ml	1000 CFU / 1 ml	1000 CFU / 1 ml

¹⁾ Comment:
The textiles processed must be free of any microbiological contamination. The assessment is carried out by the expert microbiologists in the Department for Hygiene, Environment and Medicine at the Hohenstein Institute.

Sector-specific assignment of different textiles to the RAL Quality Certification Marks (RAL-GZ 992/1/2/3/4)*

	Care Homes	Healthcare	Food Processing	Catering	Hotel / Overnight Accommodation	Trade / Industry
	RAL-GZ 992/4 Clothing of care home residents	RAL-GZ 992/3 Linen from food processing businesses	RAL-GZ 992/2 Healthcare linen	RAL-GZ 992/1 Commercial linen		TYPES OF TEXTILES
Towels, terry cloths, dressing gowns, shower cloths and similar						
Bed linen (Duvet covers, pillow cases, sheets)						
Bedding materials (duvets and pillows), mattress protectors, incontinence items						
Kitchen textiles (aprons, tea-towels and similar)						
Table linen						
Uniforms, workwear, Corporate Fashion						
Protective clothing, personal protective equipment						
Personal clothing (Underwear/nightwear, outer clothing)						
Textile medical products (Operating theatre clothing, bandages, compression items etc.)						
Floor mats						
Wipe cloths, damp wipe cloths						

* Reprocessing requirements are currently covered by several RAL Quality Certification Marks

Hohenstein Institute

The testing institute for external controls according to RAL Quality Certification Mark 992 for professional textile services



The four Hohenstein Institutes

The Hohenstein Institute was founded in 1946 as an independent and privately-owned research and teaching centre for the textile and clothing industry and for commercial textile care companies. Today, the test and research centre is still managed as a family company, run by the third generation represented by Prof. Dr. Stefan Mecheels. At the head office in Bönningheim and around the globe, more than 550 people work to service customers.



www.hohenstein.com



HOHENSTEIN TEXTILE TESTING INSTITUTE GMBH & CO. KG	The Hohenstein Textile Testing Institute GmbH & Co. KG not only carries out testing for compliance with the OEKO-TEX® Standards 100, 1000 and 100plus but also numerous material and quality tests and inspections for all kinds of textiles.
HOHENSTEIN LABORATORIES GMBH & CO. KG	The Hohenstein Laboratories GmbH & Co. KG offers a wide range of tests and certifications which are relied upon by industry, commerce and retailers as a proven basis for decision-making when developing and marketing their products.
HOHENSTEIN INSTITUT FÜR TEXTIL- INNOVATION GGMBH	The Hohenstein Institute for Textile Innovation, with its practical research and development projects to find innovative products and procedures, opens up new segments for the whole textile industry and its target markets.
HOHENSTEIN ACADEMY E.V.	The Hohenstein Academy provides advanced training and further education opportunities, workshops and conferences for the whole textile and clothing industry and associated areas of business.

Our independence is key

Our globally recognised and renowned testing system is based on independence and neutrality. Because our areas of work and activities cover such a wide range, there is no possibility of any commercial influence.



- Sole testing centre of the German Certification Association for Professional Textile Services: Commercial linen and domestic linen, healthcare linen, and linen from food processing businesses, and clothing from care home residents
- Recognised test centre under DIN EN ISO/IEC 17025, accredited by the German Accreditation Centre (DAKKS)
- European notified test and certification centre No. 0555 for personal protective equipment (PPE), accredited by the Central Authority of the German federal states for Safety Equipment (ZLS)
- Certification centre for personal protective equipment (PPE) under EN 45011, accredited by the German Certification Centre (DAKKS)
- Accredited test centre meeting the requirements of the US Consumer Product Safety Commission (CPSC)
- Inspection centre under DIN EN ISO/IEC 17020, accredited by the German Accreditation Centre (DAKKS)

Our **quality management** system is a further guarantee of the high quality of our testing and expertise which you, the customer, can rely on at all times. The Hohenstein Institute is recognised (inter-)nationally as follows:

- Founder member of the International Association for Research and Testing in the Field of Textile Ecology (OEKO-TEX® Standard 100, 1000 and 100plus)
- Founder member of the International Testing Association for Applied UV Protection (UV Standard 801)
- Test centre for down and feathers, internationally recognised by the European Down and Feather Association (EDFA) and the International Down and Feather Bureau (IDFB)
- Test centre for the certification programme for down and/or feather-filled bedding (Traumpass label), recognised by the Association for Conformity Assessment (DIN CERTCO)



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