Replaces:
RN 79:2021-03-04
(together with RN 79-a and RN 79-b)

Colour Coating

Coating variants for gearboxes

Content

Changes

2023-10-27:
The following changed in comparison to RN 79:2021-03-04:

a) Standard divided (add RN 79-a and RN 79-b)
b) Updated references
c) Omission of variants 2.5, 6 and 8.5
d) Restructuring variants 3., 3.1 and 3.9 (new) as industrial gearboxes
e) New variants: 5.3, double layer thickness, 8.2, Mega Yacht and 8.9, Yacht, customer specific coating
f) Editorially completely revised

1 Scope

This factory standard applies to the coating of REINTJES products with different coating systems. This part of the standard describes the coating variants for gears in use at REINTJES.

The coating systems described are designed as passive atmospheric corrosion protection in the specified corrosivity categories for a medium protection period.

The associated general requirements for coating systems as well as the requirements for pre-treatment can be found in RN 79-a. Part RN 79-b provides supplementary coating variants for individual parts and components.

If there are any uncertainties regarding the intended variant and/or surface preparation, REINTJES should be contacted in advance for clarification and, if necessary, approval.

2 References

The following documents, cited in part or in whole, shall apply for the use of this standard. In the case of dated references, only the referenced edition applies; in the case of undated references, the latest edition of the referenced document (including all amendments) applies. The applicable version of the standards listed below shall apply to all contents not covered by this factory standard.

EN ISO 2808	Paints and varnishes - Determination of film thickness
EN ISO 2813	Paints and varnishes - Determination of gloss value at 20°, 60° and 85°
EN ISO 4628-3	Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 3: Assessment of degree of rusting
RN 68	Welded constructions
RN 71	Packaging and preservation; Initial preservation, transport and storage of REINTJES products
RN 79-a	Colour Coating; General requirements and pre-treatment
RN 79-b	Colour Coating; Coating variants for individual parts and components
RN 860-1	Delivery conditions for castings; Grey cast iron

3 Coating Systems

Table 1 Overview of the design variants

Variant	Primer	Intermediate layer(s)	Top layer	Designation, Examples	
1	--	--	--	RN 79-1,	uncoated
2	RAL 7032	--	--	RN 79-2,	primed
3	X	--	order	RN 79-3,	Industrial gearboxes, standard
3.1	X	1	order	RN 79-3.1,	Industrial gearboxes, strong protection
3.9				RN 79-3.9,	Industrial gearboxes, customer specific
4	--	--	--	*RN 79-4,*	*Individual parts and components, uncoated*
4.1	*RAL 7032*	--	--	*RN 79-4.1,*	*Individual parts and components, primed*
4.2	*RAL 9010*	--	--	*RN 79-4.2,*	*Individual parts and components, REINTJES Yacht Premium primed*
4.3	*RAL 7032*	--	order	*RN 79-4.3,*	*Individual parts and components, end coated*
4.4	*RAL 9010*	--	order	*RN 79-4.4,*	*Individual parts and components, REINTJES Yacht Premium end coated*
5	RAL 7032	--	RAL 7001	RN 79-5,	Standard, RAL 7001
5.1	RAL 7032 (RAL 9010)	--	order	RN 79-5.1,	customer specific colour, e. g. RAL 6011
5.2	RAL 7032 (RAL 9010)	1	order	RN 79-5.2	strong protection, customer specific colour, e. g RAL 6011,
5.3	RAL 7032 (RAL 9010)	1	order	RN 79-5.3,	double layer thickness, customer specific colour, e. g RAL 6011
7				RN 79-7,	customised coating
8				RN 79-8,	Preparation Yacht design
8.1	RAL 9010	--	order	RN 79-8.1,	REINTJES Yacht Premium
8.2				RN 79-8.2,	REINTJES Mega Yacht
8.9				RN 79-8.9,	Yacht, customised coating
9	RAL 9010	--	RAL 9010	RN 79-9,	FORTJES®, RAL 9010

The design variants described in the following specify the type and scope of the colour coating of REINTJES products for different areas of application in the standard case. Deviations from this required in individual cases are to be specified in detail in the order description and must comply with the specifications in variants 3.9, 7 or 8.9 (customer-specific coating systems). The general requirements from RN 79-a as well as the respective applicable form of preparation and primer must be complied with.

The detailed descriptions of variants 4 to 4.4 can be found separately in RN 79-b.

Variant 1	**Uncoated**
Designation, colour	RN 79-1, uncoated
Description, scope of application	Gearboxes/Components without any coating For complete gearboxes, individual components may have a standard coating.
Protection period	CAUTION! High risk of corrosion; the necessary preservation or packaging must be specified in the order in accordance with RN 71.
Surface preparation	in accordance with RN 79-a chapter 6.1 c)

Variant 2	**Primed**
Designation, colour	RN 79-2, primed
Description, scope of application	Gearboxes/Components with standard primer for marine gearboxes in RAL 7032. If RAL 9010 is to be used as a different colour, this must be specified accordingly in the order. Top coat is applied externally.
Protection period	CAUTION! High risk of corrosion; the necessary preservation or packaging must be specified in the order in accordance with RN 71.
Surface preparation	in accordance with RN 79-a chapter 6.1
Primer coating	Zinc-phosphate-containing 1K synthetic resin-based primer Colour: RAL 7032 Dry film thickness: 40 - 60 µm

Variant 3	**Industrial gearboxes, Standard**	
Designation, colour	RN 79-3, Industrial gearboxes	
Description	Industrial gearbox coating Standard	
Scope of application	Gearboxes/Components for corrosivity categories C2 (H)/C3 (M)	
Protection period[1)]	Category C2: high Category C3: medium	
Temperature resistance	up to +150 °C above 120 °C, the colour shade of the top coat may change and the top coat may become brittle.	
Material	Steel/Cast iron/Cast steel	
Surface preparation	in accordance with RN 79-a Chapter 6.3	
Total dry film thickness	160 µm	
Primer coating	Dry film thickness: Binder: Colour:	80 µm 2K EP Primer grey
Top Coat	Dry film thickness: Binder: Colour: Gloss grade:	80 µm 2K Polyurethane as ordered silk matt or semi-glossy

Variant 3.1 Industrial gearboxes, strong protection

Designation, colour	RN 79-3.1, Industrial gearboxes, strong protection	
Description	Industrial gearbox coating for strong corrosion protection	
Scope of application	for corrosivity category C4 (H), long protection period	
Protection period[1)]	Category C4: high	
Temperature resistance	up to +150 °C above 120 °C, the colour shade of the top coat may change and the top coat may become brittle.	
Material	Steel/Cast iron/Cast steel	
Surface preparation	in accordance with RN 79-a Chapter 6.3	
Total dry film thickness	240 µm	
Primer coating	Dry film thickness: Binder: Colour:	80 µm 2K EP Primer grey
Intermediate coating	as primer coating Dry film thickness:	 80 µm
Top Coat	Dry film thickness: Binder: Colour: Gloss grade:	80 µm 2K Polyurethane as ordered silk matt or semi-glossy

Variant 3.9 Industrial gearboxes, customer specific

Designation, colour	RN 79-3.9, Industrial gearboxes, customer specific
Description	Industrial gearbox coating customer specific
Protection period	depending on the desired coating
Material	Steel/Cast iron/Cast steel
Surface preparation	in accordance with RN 79-a Chapter 6.3
Special features	For all special finishes, additional work and time, in some cases considerable, must be expected. All requirements deviating from the specifications of this standard, e.g. other coating agents (2K lacquer, etc.), a special layer structure, colouring or coating of components, etc. must be noted in detail in the order description. The specifications of RN 79-a Chapters 4 and 5 must be observed. To be indicated in particular: • number and sequence of layers • type of coating, product description, e. g. synthetic resin varnish, possibly manufacturer's name, manufacturer's no. • colour shade and/or number (RAL, Munsell, …) and gloss grade • layer thicknesses • supplementary interior coating

Variants 4.X are all to be found in RN 79-b.

Variant 5	**Marine gearbox, Standard, RAL 7001**
Designation, colour	RN 79-5, RAL 7001
Description, scope of application	Standard gearbox coating with primer (RAL 7032) and top coat (RAL 7001) for use in machine rooms.
Protection period[1)]	in category C2: medium
Material	Steel/Cast iron/Cast steel/Aluminium alloys
Surface preparation	in accordance with RN 79-a Chapter 6.1
Primer coating	Zinc-phosphate-containing 1K synthetic resin-based primer Colour: RAL 7032 Dry film thickness: 40 - 60 µm Use case: only for standard-top coat
Top Coat, standard	Synthetic resin topcoat on alkyd resin basis (AK) Colour: RAL 7001 Dry film thickness: 40 - 60 µm
Top Coat, optional	2K PUR Direct Topcoat Colour: RAL 7001 Dry film thickness: 40 - 60 µm Use case: see RN 79-a Chapter 5 d)

Variant 5.1	**Marine gearbox, standard, customer specific colour**
Designation, colour	RN 79-5.1, e. g. RAL 6011
Description, scope of application	Standard gearbox coating with primer and top coat in custom colour for use in machine rooms.
Protection period[1)]	in category C2: medium
Material	Steel/Cast iron/Cast steel
Surface preparation	in accordance with RN 79-a Chapter 6.1
Primer coating	Zinc-phosphate-containing 1K synthetic resin-based primer Colour: RAL 7032/RAL 9010 Dry film thickness: 40 - 60 µm
Top Coat, standard	Synthetic resin topcoat on alkyd resin basis (AK) Colour: customer specific Dry film thickness: 40 - 60 µm
Top Coat, optional	2K PUR Direct Topcoat Colour: customer specific Dry film thickness: 40 - 60 µm Use case: see RN 79-a Chapter 5 d)

Variant 5.2 Marine gearbox, strong protection, customer specific colour

Designation, colour	RN 79-5.2, strong protection, e. g. RAL 6011
Description, scope of application	Gearbox coating with primer (RAL 7032), intermediate coating and top coat in custom colour for use in machine rooms.
Protection period[1)]	in category C3: high
Material	Steel/Cast iron/Cast steel
Surface preparation	in accordance with RN 79-a Chapter 6.1
Primer coating	2K EP Primer Colour: customer specific (Standard RAL 7032) Dry film thickness: 70 µm ± 20 µm
Intermediate coating	2K topcoat on polyurethane basis (PUR) Colour: customer specific Dry film thickness: 70 µm ± 10 µm
Top Coat, standard	2K topcoat on polyurethane basis (PUR) Colour: customer specific Dry film thickness: 70 µm ± 10 µm Total dry film thickness: 210 µm ± 30 µm
Top Coat, optional	2K PUR Direct Topcoat Colour: customer specific Dry film thickness: 140 µm ± 10 µm Total dry film thickness: 210 µm ± 30 µm Use case: see RN 79-a Chapter 5 d)

Variant 5.3 Marine gearbox, double layer thickness, customer specific colour

Designation, colour	RN 79-5.3, double layer thickness, e. g. RAL 6011
Description, scope of application	Standard gearbox coating with primer, intermediate coating and top coat in custom colour for use in machine rooms.
Protection period[1)]	in category C2: high
Material	Steel/Cast iron/Cast steel
Surface preparation	in accordance with RN 79-a Chapter 6.1
Primer coating	Zinc-phosphate-containing 1K synthetic resin-based primer Colour: RAL 7032/RAL 9010 Dry film thickness: 40 - 60 µm
Intermediate coating	as primer coating Dry film thickness: 70 µm ± 10 µm
Top Coat, standard	Synthetic resin topcoat on alkyd resin basis (AK) Colour: customer specific Dry film thickness: 40 - 60 µm
Top Coat, optional	2K PUR Direct Topcoat Colour: customer specific Dry film thickness: 40 - 60 µm Use case: see RN 79-a Chapter 5 d)

Variant 7	**Marine gearbox, customised coating**
Designation, colour	RN 79-7, customised
Description, scope of application	Gearbox with customised coating, primer and top coat according to customer specifications, in-house design
Protection period	depending on the desired coating
Surface preparation	in accordance with RN 79-a Chapter 6.1
Special features	For all special finishes, additional work and time, in some cases considerable, must be expected. All requirements deviating from the specifications of this standard, e.g. other coating agents (2K lacquer, etc.), a special layer structure, colouring or coating of components, etc. must be noted in detail in the order description. The specifications of RN 79-a Chapters 4 and 5 must be observed. To be indicated in particular: • number and sequence of layers • type of coating, product description, e. g. synthetic resin varnish, possibly manufacturer's name, manufacturer's no. • colour shade and/or number (RAL, Munsell, …) and gloss grade • layer thicknesses

Variant 8	**Marine gearbox, Preparation Yacht design**
Designation	RN 79-8, Preparation Yacht design
Description, scope of application	Gearbox preparation for yacht designs For application examples and special features see RN 79-a, Appendix B
Protection period	CAUTION! High risk of corrosion if no further coating is applied; the required preservation or packaging must be specified in the order according to RN 71.
Surface preparation	in accordance with RN 79-a Chapter 6.2
Coating	No colour coating by REINTJES, enclosures remain primed as supplied, cf. RN 68-2 YP (welded housings) resp. RN 860-1 YP (cast housings)

Variant 8.1 Marine gearbox, REINTJES Yacht Premium

Designation, colour	RN 79-8.1, REINTJES Yacht Premium
Description, scope of application	Yacht Premium coating by REINTJES with 2K primer and 2K top coat.
Protection period[1)]	in Category C2: high in Category C3: medium
Material	Steel / Cast iron / Cast steel / Aluminium alloys
Surface preparation	in accordance with RN 79-a Chapter 6.2
Primer coating	2K EP Primer Colour: RAL 9010 Dry film thickness: 100 - 120 µm
Top Coat	2K topcoat on polyurethane basis (PUR) Colour: customer specific (standard RAL 9010) Gloss grade: ≥ 80 GU (medium gloss, semi-gloss) Dry film thickness: 100 - 120 µm Total dry film thickness: 200 -240 µm

Variant 8.2 Marine gearbox, REINTJES Mega Yacht

Designation, colour	RN 79-8.2, REINTJES Mega Yacht
Description, scope of application	Mega Yacht coating by REINTJES with 2K primer and 2K top coat.
Protection period[1)]	depending on the desired coating
Material	Steel/Cast iron/Cast steel/Aluminium alloys
Surface preparation	in accordance with RN 79-a Chapter 6.2 (consider variant)
Special features	Colour coding, which coating applies in which quality at which location, is to be found in the order-specific drawing (see example 0-108-150434). This is to be recorded in writing in the order between REINTJES and the customer. All special features regarding layer structure, colouring or coating of components are to be noted in detail in the order description. To be indicated in particular: • number and sequence of layers • type of coating, product description, e. g. synthetic resin varnish, possibly manufacturer's name, manufacturer's no. • colour shade and/or number (RAL, Munsell, …) and gloss grade • layer thicknesses

Variant 8.9 Yacht gearboxes, customised coating

Designation, colour	RN 79-8.9, Yacht customised
Description, scope of application	Yacht gearboxes with customised coating, primer and top coat according to customer specifications, in-house design.
Protection period	depending on the desired coating
Surface preparation	in accordance with RN 79-a Chapter 6.2
Special features	For all special finishes, additional work and time, in some cases considerable, must be expected. All requirements deviating from the specifications of this standard, e.g. other coating agents (2K lacquer, etc.), a special layer structure, colouring or coating of components, etc. must be noted in detail in the order description. The specifications of RN 79-a Chapters 4 and 5 must be observed. To be indicated in particular: • number and sequence of layers • type of coating, product description, e. g. synthetic resin varnish, possibly manufacturer's name, manufacturer's no. • colour shade and/or number (RAL, Munsell, …) and gloss grade • layer thicknesses

Variant 9 Marine gearboxes, FORTJES®

Designation, colour	RN 79-9, FORTJES®, RAL 9010
Description, scope of application	Standard coating for the FORTJES® overhead gearbox with 2K primer and 2K top coat in Colour RAL 9010 and for use in machine rooms.
Protection period[1)]	in Category C2: high in Category C3: medium
Material	Steel/Cast iron/Cast steel/Aluminium alloys
Surface preparation	in accordance with RN 79-a Chapter 6.1
Primer coating	2K EP Primer Colour: RAL 9010 Dry film thickness: 80 µm ± 20 µm
Top Coat	2K topcoat on polyurethane basis (PUR) Colour: RAL 9010 Gloss grade: ≥ 60 GU (medium gloss, semi-gloss) Dry film thickness: 50 µm ± 10 µm Total dry film thickness: 130 µm ± 30 µm
Special features	• Top coat in RAL 9010 also for terminal box and logo • do not paint cable and remove before painting if necessary • particularly careful finishing, without runners in the visible area; avoid noses or other damage to the paintwork • standard treatment for other parts (no special measures)

1) First repair measures become necessary after reaching of rust degree Ri3 according to EN ISO 4628-3.