

NORWEGIAN WOOL STANDARD



QUALITY TYPE A: WHITE CROSSBRED WOOL, FULL YEAR GROWTH

Quality class	Length requirements	Fineness requirements	Bulk	Crimp	Kemp	Medulla	Yield	Vegetable matter	Colour	Pigment	Cotting	Character
A1	≥ 100 mm	Mid. diam. ≤ 33,5 μ Max pr fleece: 39 μ	≥ 24 cm3/g	Distinct	≤ 0,3 %	≤ 3 %	≥ 70 %	≤ 0,4 %	8 < (y-z) < 13	0	Minimal	Crossbred

QUALITY TYPE B: WHITE CROSSBRED WOOL AND WOOL FROM NORWEGIAN SPÆL SHEEP, SHORN IN SPRING

Quality class	Length requirements	Fineness requirements	Bulk	Crimp	Kemp	Medulla	Yield	Vegetable matter	Colour	Pigment	Cotting	Character
B1	≥ 40 mm	Mid. diam. ≤ 33 μ Max pr fleece: 38 μ	≥ 24 cm3/g	Distinct	≤ 0,3 %	≤ 3,0 %	≥ 67 %	≤ 0,3 %	8 < (y-z) < 13	0	Minimal	Crossbred
B2	≥ 40 mm	Max pr fleece: 80 μ			≤ 2,0 %	≤ 10 %	≥ 65 %	≤ 0,7 %	8 < (y-z) < 14	0	Slight cotting accepted	Atypical is accepted

QUALITY TYPE C: CROSSBRED WOOL, SHORN IN AUTUMN (FULL YEAR GROWN WOOL IS ACCEPTED IN C2, FULL YEAR GROWN WOOL AND WOOL SHORN IN SPRING IS ACCEPTED IN C1S AND C2S, WOOL OF NORWEGIAN SPÆL SHEEP IS ACCEPTED IN C2S)

Quality class	Length requirements	Fineness requirements	Bulk	Crimp	Kemp	Medulla	Yield	Vegetable matter	Colour	Pigment	Cotting	Character
C1	≥ 70 mm	Mid. diam. < 33 μ Max pr fleece 38 μ	≥ 24 cm3/g	Distinct	≤ 0,3 %	≤ 3,0 %	≥ 76 %	≤ 0,3 %	8 < (y-z) < 13	0	Minimal	Crossbred
C2	≥ 70 mm	Max pr fleece: 80 μ			≤ 2,0 %	≤ 10 %	≥ 70 %	≤ 0,7 %	8 < (y-z) < 14	0	Slight cotting accepted	Atypical is accepted
C1S	≥ 40 mm	Mid. diam. < 33,5 μ Max pr fleece 39 μ	≥ 24 cm3/g	Distinct	≤ 0,3 %	≤ 3,0 %	≥ 67 %	≤ 0,3 %		Yes	Minimal	Crossbred
C2S					Accepted	Accepted	≥ 64 %	≤ 4,0 %		Yes	Accepted	Atypical is accepted

QUALITY TYPE F: WOOL OF NORWEGIAN SPÆL SHEEP, SHORN IN AUTUMN

Quality class	Length requirements undercoat wool	Fineness requirements undercoat wool	Length requirements outer wool	Fineness requirements outer wool	Bulk	Lustre	Kemp	Medulla	Yield	Vegetable matter	Colour	Pigment	Cotting	Character
F1	≥ 40 mm	≤ 25 μ	≥ 120 mm	≤ 60 μ	≤ 21 cm3/g	Observable	≤ 0,3 %	≤ 3,0 %	≥ 76 %	≤ 0,4 %	8 < (y-z) < 13	0	Minimal	Norwegian spæl
F2	≥ 40 mm		≥ 120 mm	≤ 90 μ			≤ 2,0 %	≤ 10 %	≥ 75 %	≤ 0,7 %	8 < (y-z) < 14	0	Slight cotting accepted	Atypical is accepted
F1S	≥ 40 mm	≤ 25 μ	≥ 120 mm	≤ 60 μ	≤ 21 cm3/g	Observable	≤ 0,3 %	≤ 3,0 %	≥ 76 %	≤ 0,4 %		Yes	Minimal	Norwegian spæl
FIP			≥ 80 mm	≤ 60 μ		Observable	≤ 0,3 %	≤ 3,0 %	≥ 75 %	≤ 0,4 %		Yes	Minimal	Norwegian pelt sheep type

QUALITY TYPE G AND V: COTTED WOOL AND VERY COARSE WOOL – WOOL CONTAINING VEGETABLE MATTER

Quality class	Length requirements	Fineness requirements	Kemp	Medulla	Yield	Vegetable matter	Colour	Pigment	Cotting	Character
G			Accepted	Accepted	≥ 70 %	≤ 2,5 %	8 < (y-z) < 14	0	Accepted	Varied
V			Accepted	Accepted	≥ 70 %	≤ 4,0 %	8 < (y-z) < 14	0	Slight	Varied

QUALITY TYPE H: OUTSORTED WOOL (WOOL FROM BELLY, THIGHS AND TAIL)

Quality class	Length requirements	Fineness requirements	Kemp	Medulla	Yield	Vegetable matter	Discoloured by urine	Colour	Pigment	Cotting	Character
H1	Average ≥ 70 mm	Mid. diam. ≤ 40 μ Max pr fleece: 90 μ	≤ 2,0 %	≤ 10 %	≥ 70 %	≤ 0,7 %	Minimal	8 < (y-z) < 14	0	Slight	Autumn / full year growth
H2		Mid. diam. ≤ 40 μ Max pr fleece: 90 μ	≤ 2,0 %	≤ 10 %	≥ 64 %	≤ 0,7 %	Minimal	8 < (y-z) < 14	0	Slight	Spring
H3		Mid. diam. ≤ 40 μ Max pr fleece: 90 μ	≤ 2,0 %	≤ 15 %	≥ 64 %	≤ 0,7 %	Accepted		0	Slight	Varied

WHITE CROSSBRED WOOL, FULL YEAR GROWTH

A1 is white crossbred fleece wool, grown between 8 and 12 months, giving the wool a full year character. The wool is normally shorn in spring. Class A1 is soft, crimped wool with high bulk. The fibres should be longer than 100 mm and finer than 39 microns (μ). Only insignificant medulla is accepted. Kemp is not accepted. The fineness and the length of the fibres ought to be even within the fleece. Only insignificant amounts of vegetable matter and crotting are accepted, and the yield should be acceptable (see table). Good whiteness after scouring is demanded. Wool not holding the demands of class one, is placed in class C2 or in another adequate class.

WHITE CROSSBRED WOOL AND WOOL FROM NORWEGIAN SPÆL SHEEP, SHORN IN SPRING

B1 is white crossbred fleece wool, grown partly or fully in an indoor environment for half a year or less. The wool is normally shorn in spring. Class B1 is soft, crimped wool with high bulk. The fibres should be longer than 40 mm and finer than 38 μ . Only insignificant medulla is accepted. Kemp is not accepted. The fineness and the length of the fibres ought to be even within the fleece. Only insignificant amounts of vegetable matter and crotting are accepted, and the yield should be acceptable (see table). Good whiteness after scouring is demanded.

B2 is white crossbred fleece wool or white fleece wool from Norwegian spel sheep or white fleece wool from hybrids. The fleece has grown partly or fully in an indoor environment for half a year or less. The wool does not fulfil the demands of class B1. The fibres should be longer than 40 mm and finer than 80 μ . Medulla and kemp are accepted (see table). Some content of vegetable matter and slight crotting are accepted. A lower yield than in class B1 is accepted. The demand for whiteness after scouring is lower than in first class.

CROSSBRED WOOL, SHORN IN AUTUMN

C1 is white crossbred fleece wool grown outdoor for approximately half a year. The wool is normally shorn in autumn. Class C1 is soft, crimped wool with high bulk. The fibres should be longer than 70 mm and finer than 38 μ .

Only insignificant amounts of medulla are accepted. Kemp is not accepted. The fineness and the length of the fibres ought to be even within the fleece. Only insignificant amounts of vegetable matter and crotting are accepted, and the yield should be high (see table). Good whiteness after scouring is demanded.

C2 is white crossbred fleece wool or white fleece wool from hybrids between crossbred and Norwegian spel sheep. The fleece has grown outdoor for approximately half a year or more. The wool does not fulfil the demands of class C1. The fibres should be longer than 70 mm and finer than 80 μ . Medulla and kemp are accepted (see table). Some vegetable matter and slight crotting are accepted. A lower yield than in first class is accepted. The demand for whiteness after scouring is lower than in class C1.

C1S is pigmented crossbred fleece wool. Class C1S is soft, crimped wool with high bulk. The fibres should be longer than 40 mm and finer than 39 μ . Only insignificant amounts of medulla are accepted. Kemp is not accepted. The fineness and the length of the fibres ought to be even within the fleece. Only insignificant amounts of vegetable matter and crotting are accepted, and the yield should be acceptable (see table).

C2S is pigmented crossbred fleece wool or pigmented fleece wool from Norwegian spel or pelt sheep or pigmented wool from hybrids. The fleece wool does not fulfil the demands of class C1S. Also included in class C2S: Pigmented fleece wool mixed with wool from belly, thighs and tail, pigmented outsourced wool, pigmented cotted wool, pigmented wool with more than a little amount of vegetable matter, pigmented wool discoloured by urine or heavily soiled and pigmented wool shorter than 40 mm. Coarse wool, medulla and kemp are accepted.

WOOL OF NORWEGIAN SPÆL SHEEP, SHORN IN AUTUMN

F1 is white characteristic fleece wool of Norwegian spel sheep, grown outdoor for approximately half a year. The wool is normally shorn in autumn. Class F1 is long, soft and lustrous outer wool and much shorter and finer undercoat wool. The fibres of the outer wool have to be at least 120 mm long and finer than 60 μ . The fibres of the undercoat wool have to be at

least 40 mm long and finer than 25 μ . Only insignificant amounts of medulla are accepted, and only a few short, coarse fibres or kemp are accepted. Only insignificant amounts of vegetable matter and crotting are accepted, and the yield ought to be high (see table). Good whiteness after scouring is demanded.

F2 is white wool of Norwegian spel sheep or hybrids, grown outdoor for about half a year or more. The wool does not fulfil the demands for class F1. The fibres of the outer wool have to be at least 120 mm long and finer than 90 μ . Medulla is accepted. The fibres of the undercoat wool have to be at least 40 mm long. Kemp and/or short, coarse fibres are accepted. Some content of vegetable matter are accepted, as well as slight crotting. The yield can be lower than in class F1 (see table), and the demand for whiteness after scouring is lower than in first class.

F1S is pigmented characteristic fleece wool of Norwegian spel sheep, grown outdoor for about half a year. Class F1S is long, soft and lustrous outer wool and much shorter and finer undercoat wool. The fibres of the outer wool have to be at least 120 mm long and finer than 60 μ . The fibres of the undercoat wool have to be at least 40 mm long and finer than 25 μ . Only insignificant amounts of medulla are accepted, and only a few short, coarse fibres or kemp are accepted. Only insignificant amounts of vegetable matter and crotting are accepted, and the yield ought to be high (see table). Wool not fulfilling the demands of class F1S, is to be placed in class C2S.

F1P is characteristic fleece wool of pelt sheep. The wool is soft, lustrous and curly, and has grown outdoor for about half a year. The fibres of the outer wool have to be at least 80 mm long and finer than 60 μ . Only insignificant amounts of medulla are accepted, and only a small amount of kemp is accepted. Only insignificant amounts of vegetable matter and crotting are accepted, and the yield ought to be high (see table). Wool of pelt sheep not fulfilling the demands of class F1P, is to be placed in class C2S.

COTTED WOOL AND VERY COARSE WOOL

G is white, distinct cotted wool. Extreme amounts of coarse wool, medulla and kemp are accepted. Some amounts of vegetable matter are accepted.

WOOL WITH VEGETABLE MATTER

V is white wool with more than a little content of vegetable matter. Only slight cotting is accepted.

OUTSORTED WOOL (WOOL FROM BELLY, THIGHS AND TAIL)

H1 is white outsourced wool from half year autumn clip or full year growth and/or fleece wool mixed with wool from belly, thighs and tail. The average length should be at least 70 mm, and the fibre fineness less than 90 μ . Medulla and kemp are accepted. A little content of vegetable matter is accepted, as well as slight cotting. Only an insignificant amount of wool discoloured by urine is accepted.

H2 is white outsourced wool from half year spring clip, fleece wool mixed with wool from belly, thighs and tail and/or white wool shorter than 40 mm. The fibres should not be coarser than 90 μ . Medulla and kemp are accepted. A little content of vegetable matter is accepted, as well as slight cotting. Only an insignificant amount of wool discoloured by urine is accepted.

H3 is originally white wool discoloured by urine and/or heavily soiled. Medulla and kemp are accepted. Some amounts of vegetable matter and slight cotting are accepted.

COMMENTS FOR NORWEGIAN WOOL STANDARD

To measure the crossbred wool length, the pile of wool is stretched and measured up to where most of the fibres ends. Wool not fulfilling the demands of length in its natural class, is to be placed in the class where the length and the type of the wool is accepted.

Wool shorter than 40 mm is to be placed in either class H2 or C2S.

Uncharacteristic wool and wool from hybrids is to be placed in a class where the wool fits the description best. Mixed wool is to be placed in the lowest class.

Wool discoloured by urine and/or heavily soiled is to be placed in either class H3 or C2S.

Canary yellow wool or green wool (microorganisms) is to be placed in classes for pigmented wool.

Not acceptable wool according to the Norwegian standard:

- Extremely soiled wool.
- Mouldy / rotten wool.
- Moth infested wool.
- Excessively cotted wool.
- Wool discoloured by marking paint.
- Wool containing excessive quantities of vegetable matter.
- Wool discoloured by urine / heavily soiled wool containing high quantities of vegetable matter.
- Felted wool discoloured by urine.
- Felted wool containing high quantities of vegetable matter.

EXPLANATIONS

μ : micron (1/1000 mm)

Pigment: Colour naturally inside the fibre (Classes ending with S or P)

Yield: What is left after scouring (%)

Atypical wool: Uncharacteristic wool and/or wool from hybrids not fitting the description of class one.

Vegetable matter: Rubbish from the wood, hay, straw, seeds, chips and others from vegetable origin.

METHODS OF ANALYSIS

Methods of analysis that are being used in the objective quality control:

Vegetable matter: IWTO 19

Yield: IWTO scoured yield at 16 % regain, determined using IWTO 19

Mid. fibre diam/medullation/

kemp: OFDA (IWTO 47)

Colour: IWTO 56 D65 (Y-Z)

Bulk: NZS8716:1994.

Length: Method developed by NZWTA and adopted by WTAE



Animalia AS
Norwegian Meat and Poultry
Research Centre
Lørenveien 38
P6. 396 Økern
N-0513 Oslo
Norway
+47 23 05 98 00
animalia@animalia.no
animalia.no

In case of inquiries for courses / more folders please contact Animalia, phone number + 47 23 05 98 00 or e-mail animalia@animalia.no.