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## **Raw cattle hides and calf skins —**

### **Part 1: Descriptions of defects**

*Peaux brutes de bovidés —*

*Partie 1: Descriptions des défauts*

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**ISO 2822-1:1998(E)****Foreword**

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International Standard ISO 2822-1 was prepared by Technical Committee ISO/TC 120, *Leather*, Subcommittee SC 1, *Raw hides and skins, including pickled pelts*.

ISO 2822 consists of the following parts, under the general title *Raw cattle hides and calf skins*:

- *Part 1: Descriptions of defects*
- *Part 2: Guidelines for grading on the basis of mass and size*
- *Part 3: Guidelines for grading on the basis of defects*

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# Raw cattle hides and calf skins —

## Part 1: Descriptions of defects

### 1 Scope

This part of ISO 2822 describes the defects which may occur on raw cattle hides and calf skins intended for tanning.

It is applicable to fresh and cured raw cattle hides and calf skins, but not to casualty hides and skins.

### 2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 2822. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 2822 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 2820:1974, *Leather — Raw hides of cattle and horses — Methods of trim.*

### 3 Terms relating to defects in raw cattle hides and calf skins

The defects on raw cattle hides and skins referred to in this part of ISO 2822 are divided into three categories:

- a) ante-mortem defects;
- b) post-mortem defects; and
- c) preserving defects.

#### 3.1 Causes and types of ante-mortem defects

##### 3.1.1 Abscess

Cutaneous abscesses, formed by the pyogenic organisms of different genera affecting either the grain or flesh side of the skins or even hydrolysing skin proteins leading to perforations.

##### 3.1.2 Blind warble hole

Defect formed by the warble larva (*Hypoderma bovis*, *Hypoderma lineatum*) in the skin of the living animal, but with no actual perforation.

### 3.1.3 Brand mark

Man-made mark on cattle hides and skins, generally used for identification and made with either a hot or cooled iron or chemical products.

### 3.1.4 *Demodex bovis*

Both the grain and flesh sides of cattle hides are greatly affected by *Demodectic mange* (follicular mange) mites. These mites may appear in the following forms:

- a) nodular;
- b) squamous; and
- c) acute.

The mite occurring in cattle is known as *Demodex bovis*.

Raised nodules of varying size (several mm to more than 5 cm) are visible on the flesh side of cattle hides and skins. The small nodules are not altered by beamhouse operations and appear on tanned hides as hardening of the tissues. If they measure more than 1 cm, they can form a pit by splitting the grain, or even make a hole.

### 3.1.5 Dung damage

Dung causes damage to the hide and skin by provoking an irritation resulting in coarsening of the grain. Dung also causes staining on hides.

### 3.1.6 Eczema

Eczema, caused either by fungal infection or allergic response to insects, chemicals, stress etc., is confined to face, lips, ears and vulva areas but does not materially degrade skin quality.

### 3.1.7 Fat wrinkles

Also known as grain wrinkles or neck wrinkles, fat wrinkles are associated with the twitch muscles. These muscles are striated, sheathed voluntary muscles that cause temporary folds in the grain. Removal of these muscles allows the accentuated grain wrinkles in the skin to spread out.

### 3.1.8 Goad mark

The use of goading sticks on cattle can affect the quality of their hides. Patches containing prick holes are found on many hides on the buttocks. Some goad marks are considerably larger than a prick hole.

### 3.1.9 Horn mark

Damage to the grain caused by animal horns.

### 3.1.10 Hump

Owing to the hump present in the hides of certain breeds of cattle (*Bos indicus*), the quality of the hide pattern in this area is poor and makes its subsequent processing difficult.

### 3.1.11 Hump sore

The disease in cattle caused by nematode *Stephanofilaria assamensis* results in the formation of scab and crusts, loosening of the hair and thickening of the hide. The lesion spreads in the hump region.

### 3.1.12 Lice

Owing to the irritation caused by biting or sucking types of lice, the animals scratch the affected parts of the body, leading to wounds and bruises. Louse species belonging to the genus *Linognathus* are common to cattle, but species of other genera are also found to cause these defects.

### 3.1.13 Pox mark

Hard, circular, lesion based defects leaving scar marks on the grain and at times even found penetrating the full thickness of the hides.

### 3.1.14 Ring-worm

Disease caused by fungal species of two genera *Microsporum* and *Trichophyton* in cattle. The lesions appear as raised, round, crusty patches having a diameter of 2,5 cm (1 in).

### 3.1.15 Summer sore

Defect caused by nematode *Parafilaria bovicola*. Nodules may be formed on both sides of the neck, withers, etc. Bleeding takes place from the affected areas. This disease appears during summer months and disappears in the cold weather. Summer sore is also known as summer bleeding.

### 3.1.16 Tick mark

Ticks affect hide and skin quality to a considerable extent. Ticks responsible for tick damage belong to various genera such as *Ixodus*, *Haemophysalis*, *Dermacentor*, *Hyalomma*, *Boophilus* and *Rhipicephalus*. Most common damage to cattle hides is caused by ticks belonging to the genera *Hyalomma* and *Boophilus*. They leave scar marks or open damage on the grain side of the hide and skin.

### 3.1.17 Urine damage

Urine causes damage to the hide and skin by provoking an irritation resulting in coarsening of the grain. Urine also causes a change in coloration of the hair in hides and skin.

### 3.1.18 Warble hole

Hole caused by the warble larva (*Hypoderma bovis*, *Hypoderma lineatum*) in the skin of the living animal. The scar formed as the result of a warble hole having healed is known as a healed warble hole.

### 3.1.19 White spots

Often finished leathers are degraded in quality by a defect referred to in the trade as white spots. Dyed and finished leathers exhibit small whitish spots lighter in shade compared to the rest of the leather. Investigations on this defect have revealed that certain parasitic diseases like ticks, *Demodectic mange*, etc are responsible for this defect. The lesion-affected areas of hide and skin can undergo certain structural changes that can affect their capacity of dye retention. The fine white spot or white bloom on the hide surface can also be formed due to the breakdown of fats to fatty acids by attack from certain mould species. This may result in uneven dying in the subsequent processing.

### 3.1.20 Wrinkle mark

Shrunken, shrivelled or wrinkled grain surface of leather, commonly known as drawn grain. Wrinkle marks are also growth marks caused by old age or undernourishment of the animal and adversely affect the grain surface of leather. Grain leather that forms coarse wrinkles when bent with the grain inward are known as flanky grain or loose break.

### 3.1.21 Yoke mark

Patch of hardened skin on the shoulder caused by the pressure and rubbing of the hide against the yoke.

## 3.2 Causes and types of post-mortem defects

### 3.2.1 Badly bled skin

Inadequate bleeding of the animal at the time of slaughter results in coagulated blood remaining in blood-vessels, visible on the flesh side of the skin. This defect particularly concerns calf skins.

### 3.2.2 Badly shaped head

Irregular trimming of the hide at the head (see ISO 2820).

### 3.2.3 Badly shaped shanks

Shanks cut off along a line which is not perpendicular to its longitudinal axis.

### 3.2.4 Chattering

Series of shallow and parallel streaks caused by a fleshing machine.

### 3.2.5 Cut throat

Hide and skin originating from an animal which has been bled by means of a large transversal slit across the throat (ritual slaughter).

### 3.2.6 Flay cut (scar mark)

Cut produced on the hide or skin by a knife or a flaying appliance, cutting into dermis or skin substance without there being any actual perforation.

### 3.2.7 Gouge

Thinning of the hide or skin caused by a knife, a flaying appliance or a fleshing machine without there being any actual perforation.

### 3.2.8 Grain break (grain burst)

Tears made on the grain side of the hide or skin during flaying and machine fleshing.

### 3.2.9 Hole

Complete perforation of the hide, or skin, caused by either a knife, a flaying appliance or a fleshing machine.

### 3.2.10 Poor pattern (deformation)

Irregular shape of hide or skin (see ISO 2820).

### 3.2.11 Siding or corduroying

Poor flaying of the hide or skin, shown as a series of shallow and generally parallel streaks.

## 3.3 Causes and types of preservation defects

### 3.3.1 Defect visible on the grain side of the salted hide or skin

#### 3.3.1.1 Heating (hair slip)

Putrefaction of part of the hide or skin revealed by a premature loosening of the hair.

### 3.3.2 Defects visible on the flesh side of the salted hide or skin

#### 3.3.2.1 By *Dermestes*

Damage caused by the *Dermestes* beetle and larvae on the flesh side and/or grain side of the hide during storage.

#### 3.3.2.2 Defects caused by metallic salts

Spots and damage caused by the deposit of metallic hydrates, particularly iron hydrates.

#### 3.3.2.3 Discoloration (red heat)

Discoloured areas varying from pink to brick red, due to bacteriological effects and generally indicating a deterioration of the hide or skin.

#### **3.3.2.4 Purple discoloration (purple spots)**

Discoloured areas ranging from purple to very deep blue or violet or even black resulting from a deterioration of subcutaneous and dermal tissues.

#### **3.3.2.5 Salt spots**

A small area of salted stain, white or light brown in colour.

#### **3.3.2.6 Short salting**

Surfaces showing the aspect of fresh hide or skin and caused from inadequate salting.

#### **3.3.3 Rancidity**

Hides and skins containing fats having undergone oxidation and hydrolysis as a consequence of lengthy storage periods or inappropriate storage conditions.

#### **3.3.4 Run flesh**

Small depressions and channels visible on the flesh side where tissues have decomposed due to putrefaction in the raw hide or skin.

#### **3.3.5 Sun blisters**

Flint-dried hides may produce sun blisters due to rapid drying of the surfaces causing holes or hide separation which become apparent after liming.

#### **3.3.6 Veininess**

Appearance of prominent blood vessels or vein-like protuberances occurring on the grain surface of finished leather is known as veiny grain leather. The real cause of veininess is not known. However, it is generally recognised that improper bleeding of the animal, delay in curing, inadequate curing, under-soaking, etc. might be responsible for veininess.

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**Descriptors:** hides, bovines, bovine hides, raw materials, defects, vocabulary.

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