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LEATHER AND LEATHER PRODUCTS INDUSTRY PANEL  
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# CLASSIFICATION OF WET-BLUE HIDES BY QUALITY

*Prepared by*  
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*Mention of the names of firms and commercial products does not imply endorsement by UNIDO.*

## EXPLANATORY NOTES

CDE	CENTRE FOR DEVELOPMENT OF ENTERPRISES
CFC	COMMON FUND FOR COMMODITIES
COTANCE	CONFÉDÉRATION DES ASSOCIATIONS NATIONALES DES TANNEURS ET MÉGISSIERS DE LA COMMUNAUTÉ EUROPÉENNE
ESALIA	EASTERN AND SOUTHERN AFRICAN LEATHER INDUSTRY ASSOCIATION
FAO	FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
PCP	Para Chloro Phenol
PE	poly-ethylene
TCMTB	2-(Thiocyanomethylthio) benzothiazole
TLU	Textile and Leather Unit (UNIDO)
UNIDO	UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

## Foreword

This paper has been prepared on request by UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION (UNIDO) to be presented to the 16<sup>th</sup> UNIDO Leather and Leather Products Industry Panel relating to grading and classification of wet blue hides by quality with description of defects and guidelines for grading with examples. It provided an *overview of defects (natural, mechanical and tanning defects caused during animal life, slaughter, conservation and tanning to wet-blue stage), and their relation to grading and classification by quality.*

*This classification is not intended to replace the internationally existing and accepted international standards and specification such as ISO 5433 entitled "Bovine Wet-blue Specification" or similar national standards. The purpose of this draft is to provide a working tool to the producers, buyers and sellers of wet blue bovine hides to agree on grading criteria that are acceptable to both parties and which can be modified to any suitable grading mix as agreed between the parties concerned. This classification provides clear illustrations of the material grades and specifies the defects that are acceptable in the various grades. It also provides an easy way for teaching the graders and sorters on acceptable quality of each grade.*

During the COMMON FUND FOR COMMODITIES (CFC) funded EASTERN AND SOUTHERN AFRICAN LEATHER INDUSTRY ASSOCIATION (ESALIA) project entitled "Raw Hides and Skins Grading and Pricing Systems in Selected ESALIA Countries" in November/December 2001 it was proposed by ESALIA secretariat that the project should launch a second phase and then concentrate on **classification of wet-blue hides by quality**. The author was requested to prepare a draft for such classification and a project proposal for introducing and implementing the proposed classification system.

The first draft was circulated for technical comments and suggestions for improvements to the NATIONAL BUREAU OF STANDARD in Kenya, the CONFÉDÉRATION DES ASSOCIATIONS NATIONALES DES TANNEURS ET MÉGISSIERS DE LA COMMUNAUTÉ EUROPÉENNE (COTANCE), UNIDO, as well as to some well known leather specialists such as *Messrs. Jakov Buljan, Alfred Lesuisse, Magne Nestvold and Ron Sauer* for informal comments. A great deal of their suggestions were incorporated in the second draft of the document that was presented to the ESALIA organized workshop taking place during the LINEAPELLE trade fair in Bologna in November 2002. The audience included several prominent leather industry classification experts with connections to the INTERNATIONAL ORGANIZATION FOR STANDARDS (ISO) and the Italian leather classification institute. The proposed system was well received and ESALIA was requested to continue this work and introduce the proposed system.

The draft document was further improved during the author's work as an associated consultant for the CENTRE FOR DEVELOPMENT OF ENTERPRISES (CDE) financed project entitled "Leather Sector Program for EAF and SAF". However, for various reasons the classification system was not introduced and left pending mainly due to lack of financial resources to implement the proposed related project.

During the preparation of the 16<sup>th</sup> Leather Panel it was proposed by UNIDO Textile and Leather Unit (TLU) that this type of classification system should be brought to the attention of the Panel in order to receive their view and possible recommendation to implement the project jointly with UNIDO and ESALIA.

Similar classification manuals or guidelines may be prepared also for crust leathers and leathers made of caprin and ovine origin at the time when preparing the final documents after conceptual approval.

These classification documents are intended to serve as models for national standard organizations, leather processing and leather products manufacturing industries in preparation of their own standards, manuals or guidelines. This classification can be easily modified to suite customer demanded grading in any combinations such as selling only selected individual grades or any combinations thereof such as TR 10/20/20 plus 25/IV and 25/V or any other grade-mix agreed between seller and buyer.

The draft presented here is closely following the format and style of the UNIDO publication entitled "Grading of Raw Hides and Skins by Quality". *Mr. Alfred Lesuisse* originally prepared this paper as UNIDO consultant and his work and ideas are gratefully acknowledged and utilized in the preparation of this draft. The valuable comments and support from many colleagues and the organizations involved CFC, CDE, COTANCE, FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) and UNIDO are also gratefully acknowledged.

## 0. INTRODUCTION

It is widely realized that producing and marketing of wet-blue hides and skins of acceptable quality can be achieved only if appropriate – ideally internationally acceptable – quality grading norms are applied. The producer, as well as the whole chain of related services, including purchasing of raw hides and skins by graded quality, handling and storing, the materials correctly are integrated part of the process to achieve improved quality. The main purpose of this draft is therefore to provide a *basis* for such a wet blue hides quality grading.

Heterogeneity of grading is very difficult to achieve as the commodity is mainly sold by traders who are collecting the material from many different tanneries resulting in differences in quality, sizes, thickness etc. This classification, if applied, will assist to provide the industry more acceptable and heterogeneous material.

These guidelines offers a **classification by quality** applicable on wet-blue cattle hides intended to be transformed into crust or finished leather.

It should be noted that this manual:

- in order to be applicable in a wide variety of countries, does not include classifications by weight, size or shape which are too dependent on origin, breed, age, sex, etc.
- may be adapted to “commercial” or “customer” classification.

The document shows a graphic representation visualizing the different grades or classes through schematic pictograms of a hide without relation to origin or breed. Similar quality grading system could be developed for wet blue sheep and goat skins.

It is understood that actual grading criteria established and/or applied by buyers/traders and/or – desirably – agreed upon by both suppliers and buyers may take into other factors mentioned above. In other words this manual recommends a *technical basis* that is independent of commercial conditions, but may serve as an objective quality foundation for fixing the applicable set of criteria to be used in grading and/or sorting wet blue hides.

## 1. SCOPE

The purposes of this manual is to specify procedures, as well as criteria to be used in the classification by quality of wet-blue cattle hides.



## 2. DEFINITIONS

For the purposes of this guideline, the following terms and definitions apply:

### **Blind warble**

A damage (imperforate or cicatrized) caused by *Hypoderma* species.

### **Brand**

Man-made permanent mark on a hide, generally for identification, and made by means of a hot or cooled iron or chemical products.

### **Cattle hide**

Outer covering of a bovine animal.

### **Curing**

Synonym of preservation.

### **Defect**

A general term for any damage from whatever cause on raw or cured hides and likely to depreciate the leather produced from them.

### **Latent defects**

Are those which are discovered after hair removal, e.g. puller or clamp or other mechanical damage, also defects hidden by hair.

### **Pattern of raw hides**

The shape or contour of a flayed hide when laid flat as determined by the position, length and direction of the ripping cuts made in flaying. The bleeding cut, belly cut and leg cuts must be directly in the center of the throat, belly and legs (*see figures*).

### **Pattern of wet-blue**

The shape of wet-blue full hides or sides after sorting and trimming (*see figures*).

### **Preservation of raw hides**

Treatment to protect the raw hide against harmful influences from the time of flaying until it is put in tannery processing (*see paragraph 4*).

### **Preservation of wet-blue**

Treatment to protect the wet-blue leather during storing and transportation before the re-tanning and finishing process.

### **Ripping**

The cutting open of the carcass of an animal along the belly from the neck end to the tail and along the legs (*see figures*).

### **Trimming of raw hides**

The shape given to a hide with its ultimate use in mind (*see paragraph 3*).

**Trimming of wet-blue**

Wet blue may be sold as full hides (upholstery and automobile leathers) or divided into sides (for footwear and leather goods leathers)

**Warble hole**

A damage (perforate) caused by Hypoderma species.

**Wet-blue hide**

Chrome tanned bovine hide which after tanning with chromium salts is graded in various quality grades from I-VI and rejects. Wet-blue hides are then packed in polythene bags, hessian cloth and on wooden pallets or in wooden cases to be ready for delivery.

Refer to the *figures* for definition of various parts of a cattle hide.

### 3. TRIMMING

Wet-blue hides that are processed after purchasing of the raw hides in accordance with the "ESALIA Quality Guidelines" are already trimmed in accordance with the trimming norms and standards presented in the UNIDO document entitled "Guidelines for Grading of Hides and Skins by Quality" by *Alfred Lesuisse*, senior leather industry consultant. These trimming guidelines are enclosed in *Annex 1*.

Trimming of wet-blue hides, carried out during the sorting and classification process depends on whether the material is destined to be sold as full hides or as side leather (see diagrams in *Annex 1*).

## 4. PRESERVATION OF RAW HIDES

For the purposes of this manual, following *preservation methods* are regarded as suitable in wet-bluing:

- frame-drying in the shadow,
- stack salting,
- brining,
- dry-salting,
- freezing.

It is generally accepted that raw or green hides may also be classified according to these guidelines.

**Remark:** The international standard ISO 2821 "Preservation by stack salting" describes the nature and origin of preserving process defects and recommends a preservation method of hides by stack salting.

## 5. PRESERVATION OF WET-BLUE

Wet-blue leathers may often be subject to long storing and wide transport distances from one country to another. For this reason wet-blue leathers may be subject to preservation treatments with insect repelling agents and anti-mould fungicides. Fungicides should be used to inhibit mold growth and pigmentation and should be effective and should not cause health hazard. The type of fungicides used should be agreed to between the purchaser and supplier.

The fungicides should be used in appropriate quantity to ensure storage up to 4 months at the temperature and humidity prevailing during storage and transportation.

Most importing countries have legislation against some of such agents. Presently most of the European countries have a limit of Para Chloro Phenol (PCP) 5 ppm and Germany has a limit 0.5 ppm. It should be also noted that TCMTB [2-(Thiocyanomethylthio) benzothiazole] content in wet-blue leathers is already limited in many company standards. It is expected that general prohibition of this chemical may soon take place.

## 6. WET-BLUIING

Wet-bluing is a tanning process using chromium salts as tanning agent. Wet-bluing takes place after the normal pre-tanning operations including soaking, liming, de-liming, bating, degreasing and pickling. Fungicides are added to prevent mould growth.

According to the "International Sale Contract" for hides and skin (English/Italian version, January 2002: "Technical specification") the following technical parameters are specified for wet-blue hides and splits:

- *Moisture rate* 40-60%
- *Area control*. The area to be ascertained by suitably calibrated area-meter, electronic measuring machine or other agreed means under controlled conditions.

Other chemical and physical parameters such as chrome content, fat content, pH of the water extract, shrinkage temperature, mineral salts (sulphated ash) etc. should be as per specification for wet-blue bovine hides (ISO 5433) or accepted local standard or as per any national or international standard agreed between the supplier and the purchaser. UNIDO publication "Acceptable Quality Standards in the Leather and Footwear Industry" provides information on most standards used for testing of leather.

## 7. CLASSIFICATION OF WET-BLUE HIDES BY QUALITY

### 7.1. General

Wet-blue hides shall be classified in six (6) grades in relation to faults reasonably ascertainable at the time of classing.

### 7.2. Faults and Defects

For the purposes of this standard, faults and defects are distributed in six groups:

- 7.2.1. *Natural defects* caused by diseases and parasites on the living animal: anthrax, scars, ringworm, tumours, or ticks, lice, warble etc.
- 7.2.2. *Mechanically caused defects* by the living animal: brands, bruises, scratches, wounds, wire damage etc.
- 7.2.3. *Defects caused by dirt, dung, urine stains, sand, seeds etc.*
- 7.2.4. *Flaying defects*: cuts, scores, corduroy, holes, grain cracks, pulling machine damage etc.
- 7.2.5. *Curing and storing defects*: putrefaction, red heat, salt stains etc.
- 7.2.6. *Tanning defects*:
  - Mechanical defects
    - Fleshing cuts
    - Uneven thickness due o splitting or having
    - Summing folds
  - Process and chemical defects
    - Chrome or salt stains
    - Incorrect moisture content
    - Incorrect physical or chemical properties as specified by ISO norms for wet-blue (or other relevant and agreed upon national or international technical specifications.)

### 7.3. Classification of Hides

For the purposes of this standard, the classification shall be done according to the following six grades and rejects:

#### 7.3.1. First grade

The first grade shall correspond to the following criteria:

- hide of good pattern, clean and well tanned, no sign of defects through putrefaction in raw state,
- completely free of defects in the butt and neck area, except for a maximum of 5 blind warbles,
- free of score marks or flaying defects except maximum of one hole in the bellies,
- without brand marks,
- without any tanning defects.

*Hides suitable for full-grain aniline leathers.*

#### 7.3.2. Second grade

The second grade shall correspond to the following criteria:

- hide of good pattern and well tanned, no sign of defects caused by putrefaction,

- with few small holes or cuts or other defects from group one and two in the butt,
- with moderate number of defects from groups one, two – except for brands – and four in bellies and neck,
- with one brand which is wholly within 18 cm of the perimeter of the hide,
- with a maximum of ten open warbles or twenty blind warbles,
- with small defected areas caused by dung and urine not more than an area of 30 x 30 cm on each of the hind shanks,
- without any tanning defects.

*Hides suitable for aniline and semi aniline finishes with light hair-cell printing.*

### **7.3.3. Third grade**

The third grade shall correspond to the following criteria:

- slightly defected or spoiled pattern,
- with some defects caused by putrefaction,
- with defects from group one, two - except for brands – and four up to 30 % of the hide area of which half can be covered by buffing, plating and/or light (hair-cell) grain printing,
- with a brand of which any portion is more than 18 cm from the perimeter of the hide,
- with more than ten open warbles and 20 blind warbles,
- with more dung and urine stain than acceptable for grade 2,
- some tannin defects such as slight variation of substance is allowed.

*Hides suitable for buffed, plated and/or hair-cell printed leathers.*

### **7.3.4. Fourth grade**

The fourth grade shall correspond to the following criteria:

- poor or spoiled pattern,
- with any kind of defects covering up to 40% of the hide area but half of the defects can be hidden by surface treatments such as buffing, plating and light grain printing,
- tanning defects such as thickness variation due to poor splitting or shaving are allowed, also salt and chrome stains in limited quantity are allowed.

*Hides suitable for corrected grain leathers only with grain printing and side-spraying effects or heavy coating (patent) to mask the surface defects.*

### **7.3.5. Fifth grade**

The fifth grade shall correspond to the following criteria:

- very poor or spoiled pattern,
- defects including tanning defects but excluding poor physical strength may cover 50% of the total hide surface area but half of these defects can be hidden by surface treatment such as buffing, plating and/or heavy grain printing.

*Hides suitable only for heavily corrected grain leathers.*

### **7.3.6. Sixth grade**

- very poor and spoiled pattern.
- defects covering 60% of the total hide area but half of these defects can be hidden by heavy correction and heavy grain prints; tanning effects are expected but the physical properties such as tensile and tear strength should remain within acceptable limits.

*Suitable for work-boot and similar type of leathers after heavy correction and heavy prints.*



**7.3.7. Rejects**

All hides presenting more defects than accepted for the sixth grade are classified under rejects.

## 8. Graphic Representation of the Classification

8.1. The following table summarizes the coding for grades in relation to the defects, their location and concentration as well as their depth and surface.

**Guidelines for grading hides**

Grade	Charac- teristics	Defects					
		Techno- logical	Natural	Mecha- nical	Sanitary	Flaying	Putre- faction
		Tanning	diseases, parasites, ringworm, anthrax etc.	brand marks, wounds, scratches, horn rakes etc.	dirt, dung, urine, sand etc.	cuts, holes, scores, cracks etc.	red heat, poor physical strength, stains etc.
1	Location			1-2	0	1	0
	Concentration	0	0	1	0	1	0
	Depth			1	0	1	0
	Surface			1	1	1-2	0
2	Location		2-3	2-3	2-3	2-3	1-2
	Concentration	0	1	2	1	1	1
	Depth		1	2	1	1	1
	Surface		1	1	1	1-2	1
3	Location	1-4	3-4	3-4	3-4	3-4	3
	Concentration	1	2	2	2	2	2
	Depth	1	2	2	2	2	2
	Surface	1-2	1-2	1	1	1-2	1
4	Location	1-4	3-4	3-4	3-4	3-4	3-4
	Concentration	1	2	2-3	2	2-3	2-3
	Depth	1	2	2	2	2	2
	Surface	1-2	1-2	1	1-2	1-2	1-2
5	Location	1-4	3-4	3-4	3-4	3-4	3-4
	Concentration	2	2-3	2-3	2-3	2-3	2-3
	Depth	1	2	2	2	2	2
	Surface	1-2	1-2	1-2	1-2	1-2	1-2
6	Location	1-4	3-4	3-4	3-4	3-4	3-4
	Concentration	3	3	3	3	3	3
	Depth	1	2	2	2	2	2
	Surface	1-2	1-2	1-2	1-2	1-2	1-3

**Legend - code**

Code	0	1	2	3	4
Location		periphery	legs, tail	shoulder, belly	butt
Concentration	none	low	medium	high	
Depth		superficial	through		
Surface		grain	flesh		

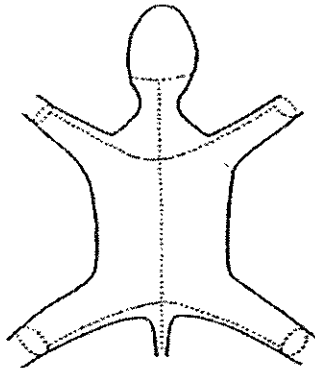
8.2. For the purposes of this manual, **Table 1** and the Pictograms 1 wet-blue hides – 13 wet-blue hides, show the graphic representation of the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> grades.

## 9. Notes on Packing of Wet-blue

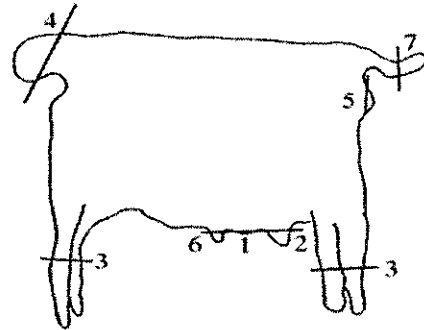
Packing usually on pallets, covered with polyethylene foils and heavy rubberized jute or Hessian cloth and/or heavy poly-ethylene (PE) foil. 6 or 12 sides with backbone right altering with 6 or 12 sides with bellies right, height of pack about 3 feet or 90 cm. (Synthetic barrels are used mainly for packing of pickled skins). Packing in wooden boxes is considered often too expensive to be used for standard wet-blues. Usually the packing is agreed between buyer and seller and tailor made to fit containers.

Trimming norms for raw hides

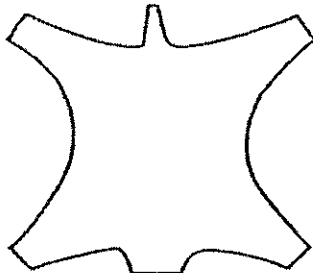
**TRIMMING**



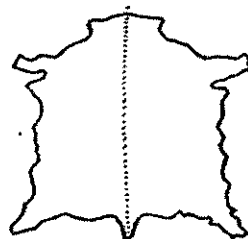
ripping cuts



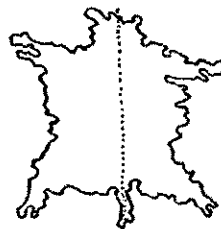
- 1. scrotum or
- 2. udder
- 3. legs at the knee
- 4. neck
- 5. anus
- 6. navel
- 7. tail



result of good ripping

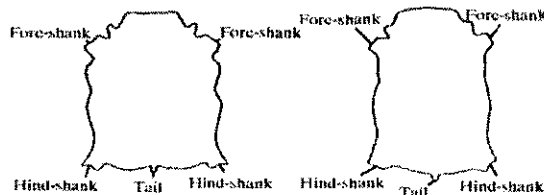


good pattern



poor pattern

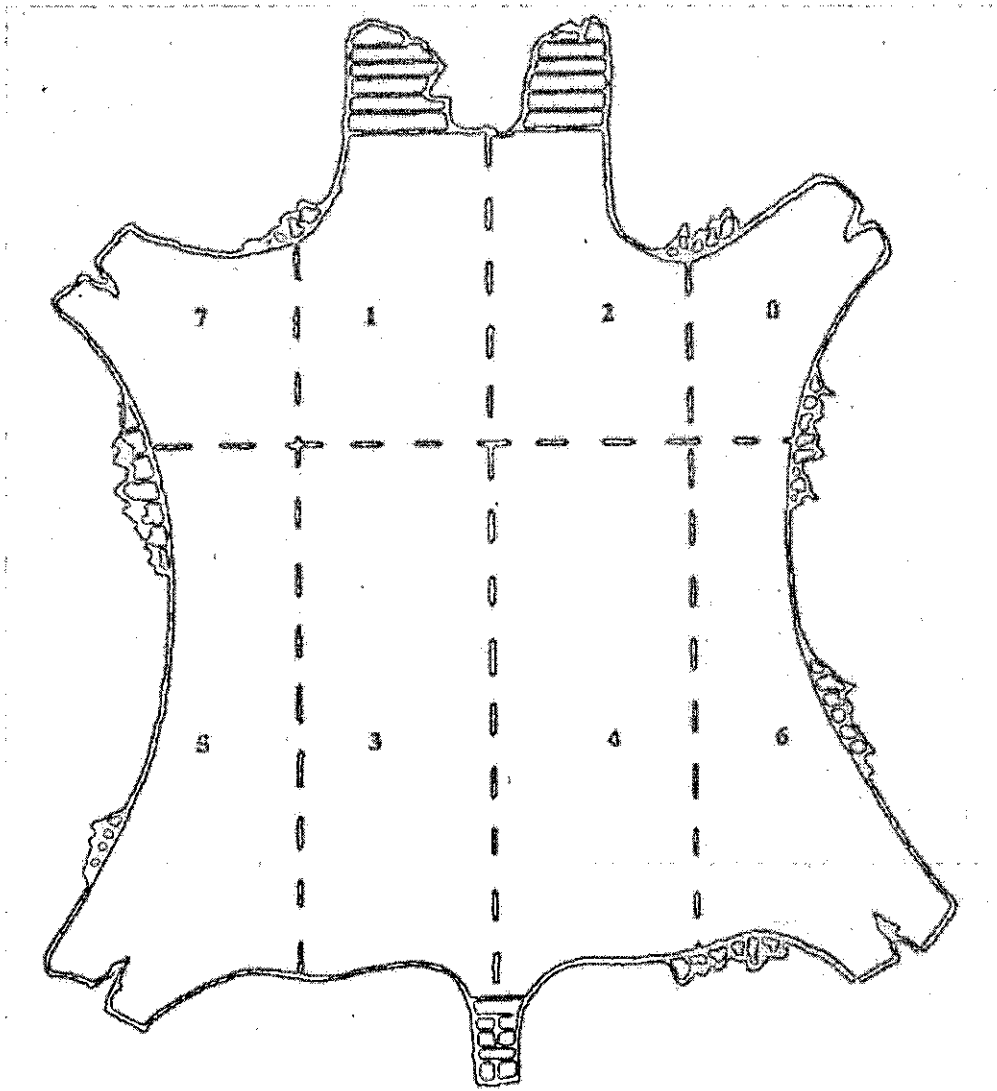
**METHODS OF PRESENTATION FOR FLAYED SKIN**



In Ethiopia

In Tanzania

## Subdivision of cattle hide

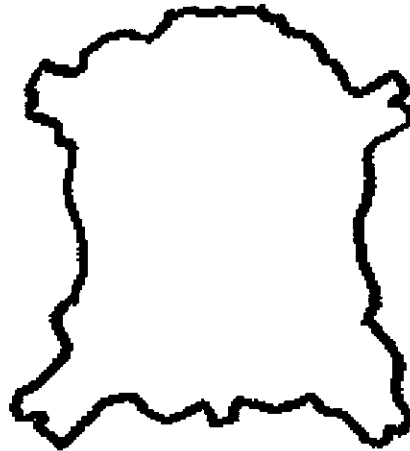


<b>A</b>	Whole hide	1+2+3+4+5+6+7+8
<b>B</b>	Bellies	5 and 6
<b>C</b>	Dossets (double backs)	3+4
<b>D</b>	Shoulders	1+2
<b>E</b>	Butts (Crupons)	3 and 4
<b>F</b>	Sides	1+3+5 and 2+4+6
<b>G</b>	Culatas	5+7 and 6+8
<b>H</b>	Front (Shoulders)	7+1+2+8
<b>I</b>	Shaded areas are trimmed off	

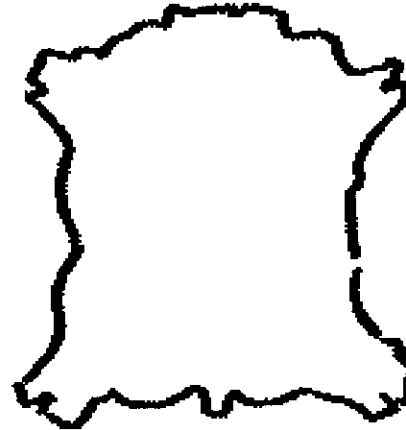
**Pictograms for  
Wet-blue Hides Grading  
by Quality**

## FIRST GRADE (Full hides)

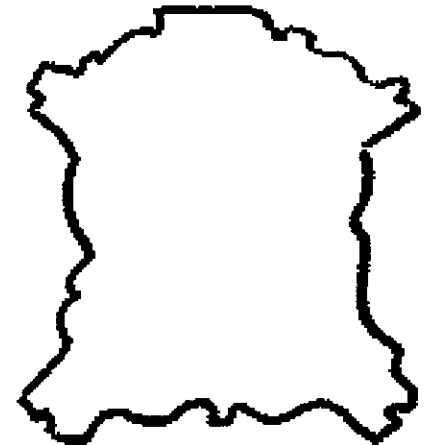
- DEFECTS CAUSED BY PUTREFACTION
- DEFECTS CAUSED BY DUNG URINE OR DIRT
- BRAND MARKS



NO SIGN OF DEFECTS AND PUTREFACTION



CLEAN



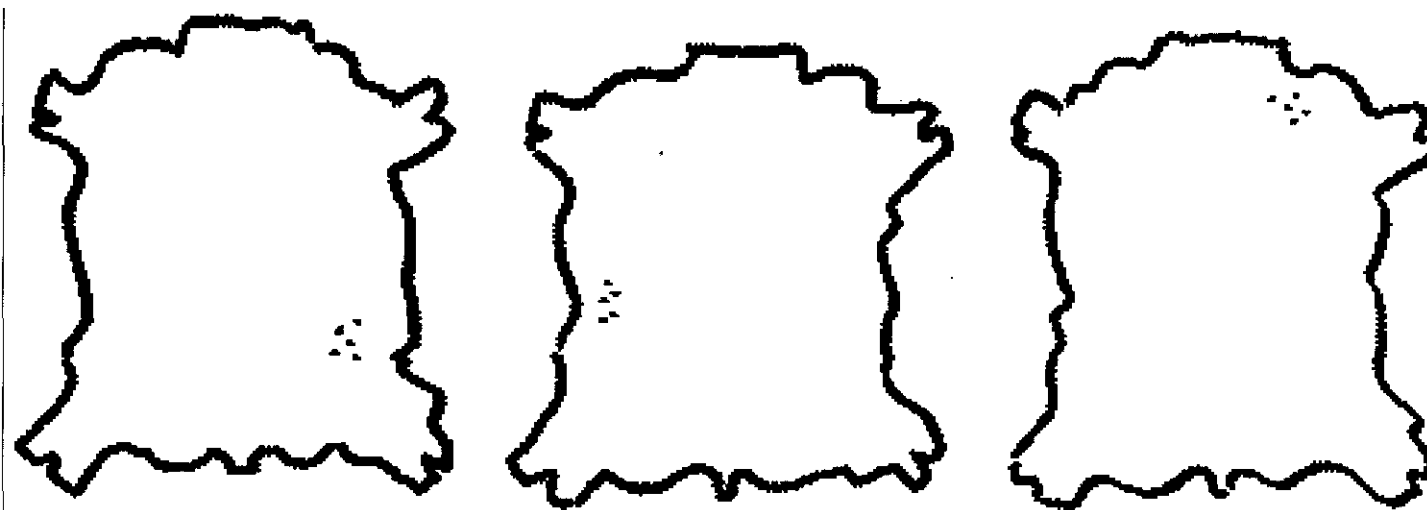
NO BRAND MARKS  
NO TANNING DEFECTS

SUITABLE FOR FULL GRAIN ANILINE LEATHERS



# FIRST GRADE

**WARBLES**

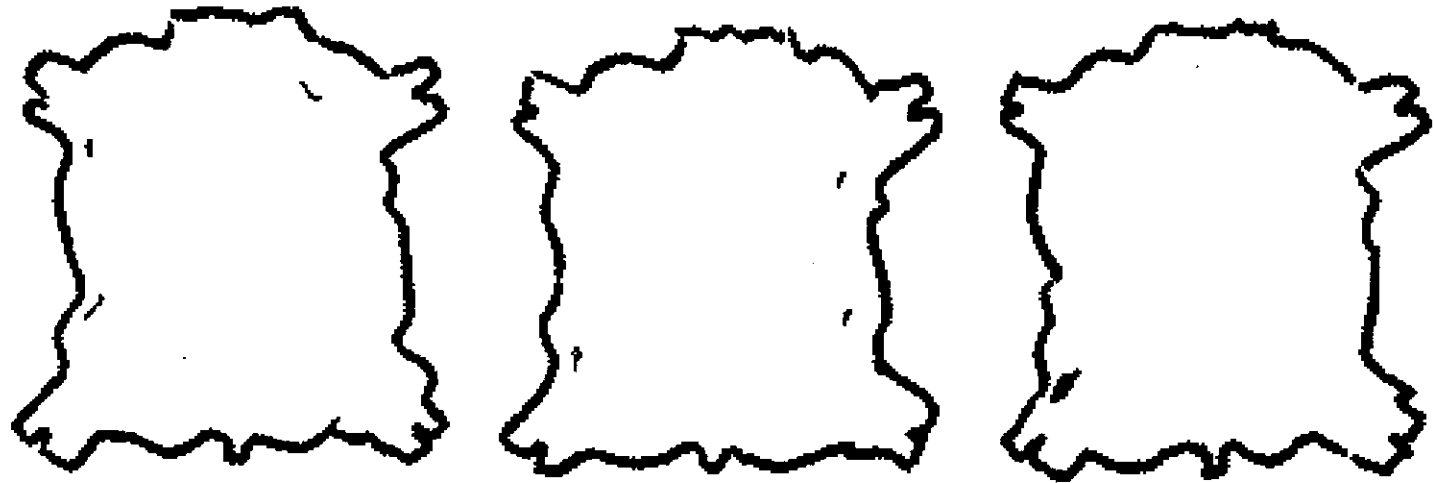


**MAXIMUM 5 BLIND WARBLES**

**SUITABLE FOR FULL GRAIN ANILINE LEATHERS**

# FIRST GRADE

**SCORE  
MARKS  
HOLES**

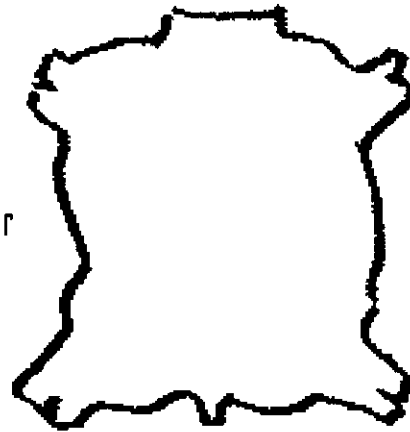


**FEW SCORE MARKS OR ONE HOLE**

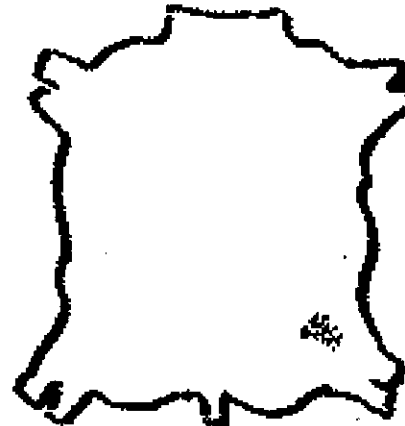
**SUITABLE FOR FULL GRAIN ANILINE LEATHERS**

## SECOND GRADE

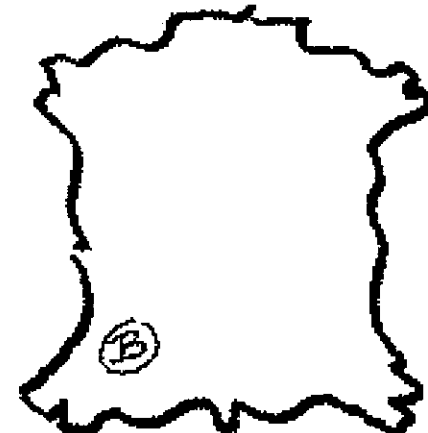
- DEFECTS CAUSED BY PUTREFACTION
- DEFECTS CAUSED BY DUNG URINE OR DIRT
- BRAND



NO SIGNS OF  
DEFECTS AND  
PUTREFACTION



DUNG URINE OR  
DIRT DEFECTS  
MAX 30X30 CM

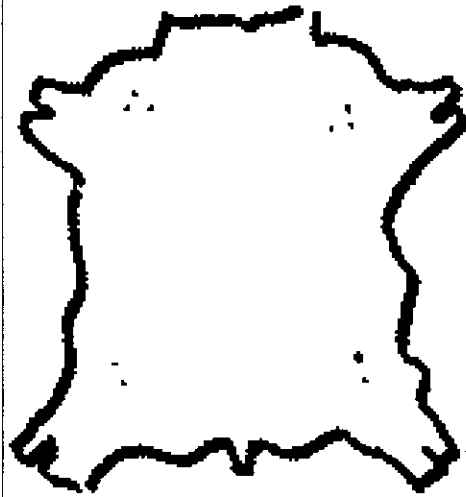


BRAND MARKS  
ONE SMALL  
MARK  
ALLOWED  
NO TANNING  
DEFECTS

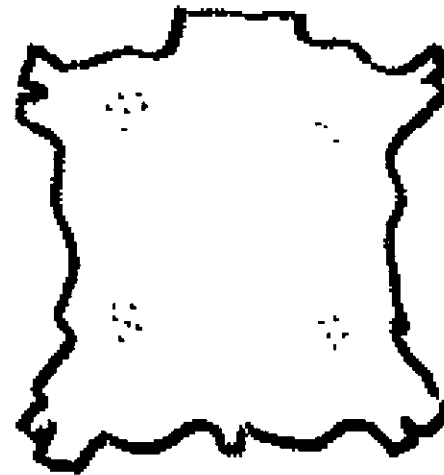
**SUITABLE FOR SEMI-ANILINE AND LIGHTLY CORRECTED GRAIN  
LEATHERS WITH HAIR-CELL PRINT.**

## SECOND GRADE

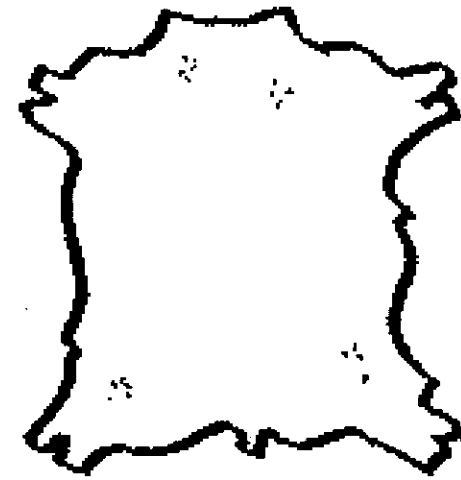
WARBLES



MAXIMUM  
OF TEN OPEN  
WARBLES



MAXIMUM OF  
TWENTY BLIND  
WARBLES



MAXIMUM OF  
TWENTY BLIND  
WARBLES

SUITABLE FOR SEMI-ANILINE AND LIGHTLY CORRECTED GRAIN  
LEATHERS WITH HAIR-CELL PRINT.

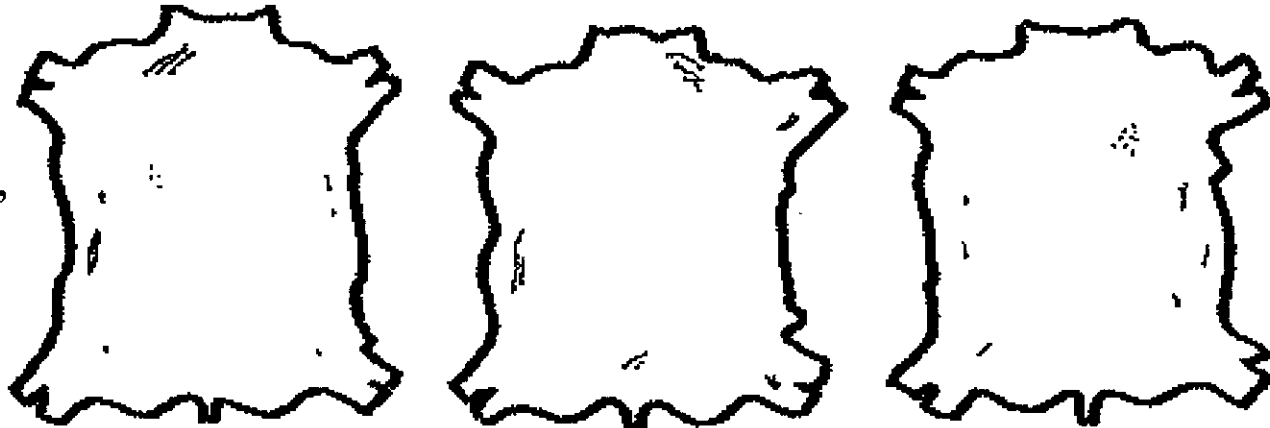
## SECOND GRADE

**-SCARS, TICK MARKS  
RINGWORMS, ETC**

**-BRUISES,  
SCRATCHES WOUNDS,  
ETC**

**-FLAY CUTS**

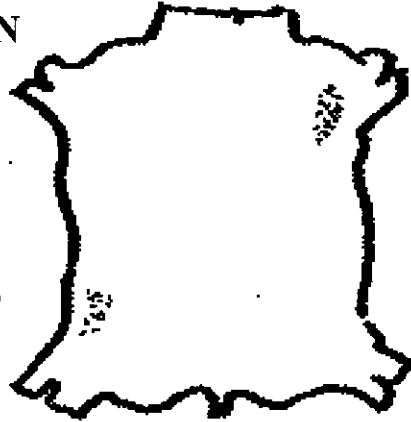
**-NO TANNING  
DEFECTS ALLOWED**



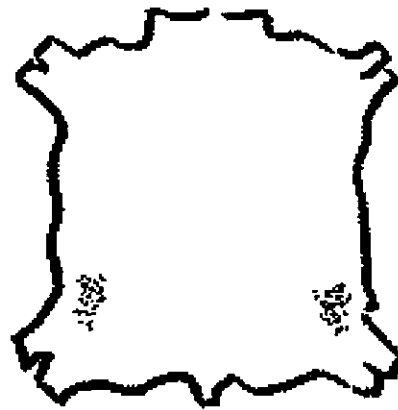
**SUITABLE FOR SEMIANILINE AND LIGHTLY CORRECTED GRAIN  
LEATHERS WITH HAIRCELL PRINT.**

## THIRD GRADE

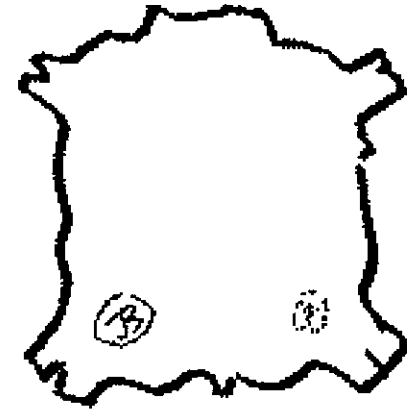
- DEFECTS CAUSED BY PUTREFACTION
- DEFECTS CAUSED BY DUNG URINE OR DIRT
- BRAND MARKS
- SOME TANNING DEFECTS ALLOWED SUCH AS SLIGHT VARIATION OF



SOME DEFECTS CAUSED BY PUTREFACTION



SOME DEFECTS CAUSED BY DUNG, URINE OR DIRT MAX TWO DEFECTS NOT EXCEEDING 30X30 CM

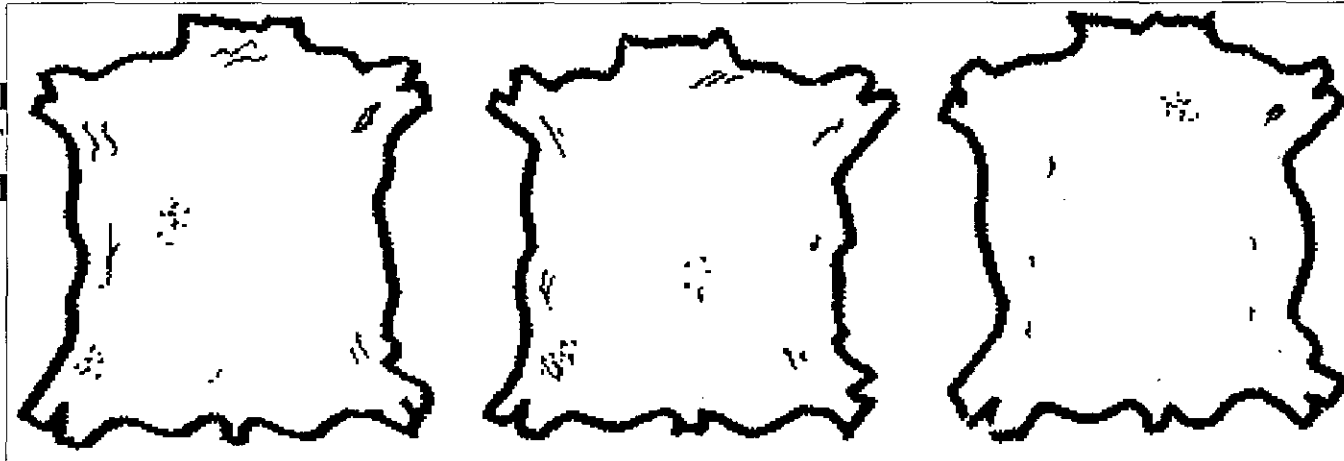


BRAND MARKS SOME TANNING DEFECTS ALLOWED

**SUITABLE FOR BUFFED, PLATED AND CORRECTED GRAIN LEATHERS WITH MEDIUM HEAVY PRINT**

## THIRD GRADE

- SCARS, TICK MARKS, RINGWORMS, ETC.
- BRUISES, WOUNDS, SCRATCHES
- FLAY CUTS

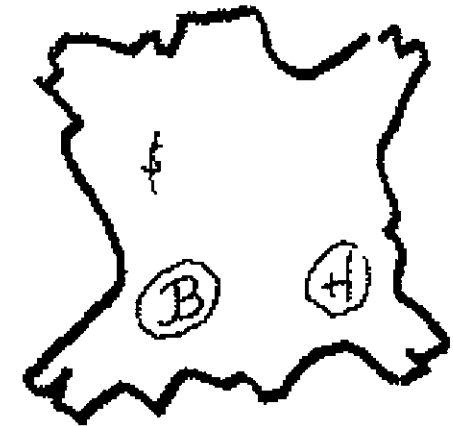
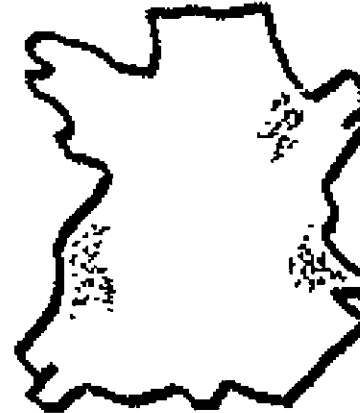
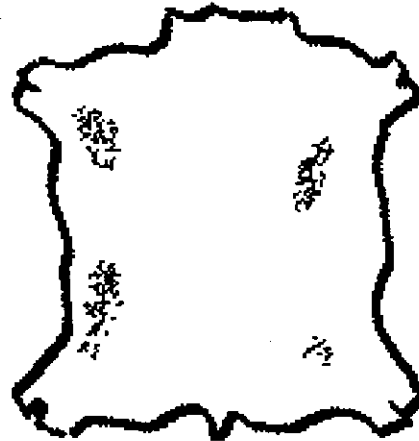


**DEFECTS FROM GROUP 1 & 2 (EXCEPT BRAND MARKS) UP TO 30%  
OF THE TOTAL HIDE AREA**

**SUITABLE FOR BUFFED, PLATED AND CORRECTED  
GRAIN LEATHERS WITH MEDIUM HEAVY PRINT**

## FOURTH GRADE

- DEFECTS CAUSED BY PUTREFACTION
- DEFECTS CAUSED BY DUNG URINE OR DIRT
- POOR PATTERN & BRAND MARKS
- TANNING DEFECTS SUCH AS



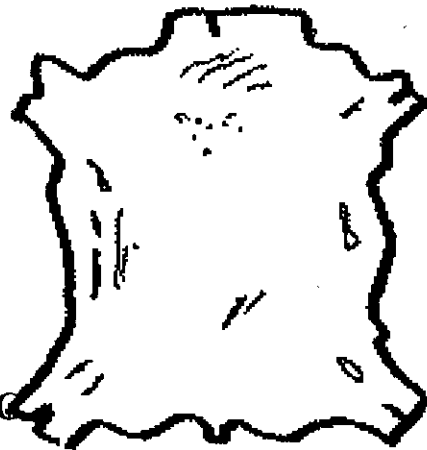
Foulds caused by summing operation allowed at flanks

**SUITABLE FOR CORRECTED GRAIN, PRINTED LEATHERS WITH SIDE SPRAYING AND ANTIQUE EFFECTS WITH HEAVY COATING**



## FOURTH GRADE

PREMORT  
EM AND  
POST  
MORTEM  
DEFECTS,  
NATURAL  
DEFECTS,  
MECHANICAL  
DEFECTS,

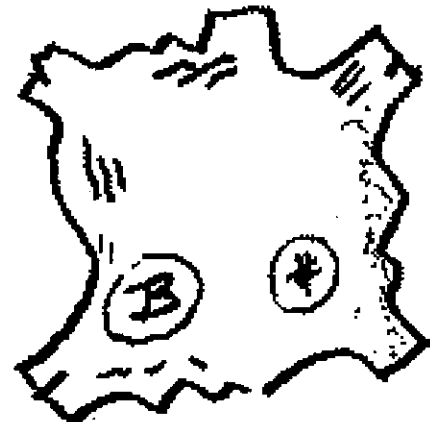
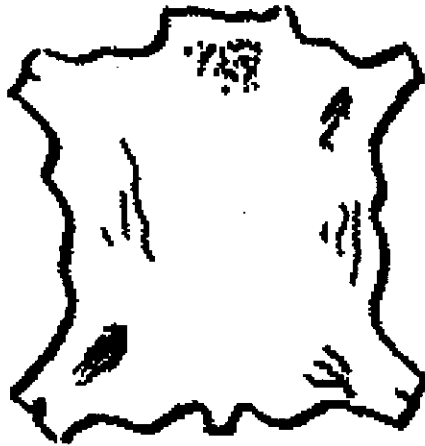


ANY KIND OF DEFECTS COVERING UP TO 40% OF THE  
TOTAL HIDE AREA.

**SUITABLE FOR CORRECTED GRAIN, PRINTED LEATHERS  
WITH SIDESPRAYING AND ANTIQUE EFFECTS WITH  
HEAVY COATING**

## FIFTH GRADE

- PREMORTEM  
AND POST  
MORTEM  
DEFECTS,  
NATURAL  
DEFECTS,  
MECHANICAL  
DEFECTS,  
FLAYING  
DEFECTS,  
BRANDS, POOR



ANY KIND OF DEFECTS COVERING UP TO 50% OF THE  
TOTAL HIDE AREA.

**SUITABLE FOR DEEPLY CORRECTED GRAIN, HEAVYLY  
PRINTED LEATHERS WITH HEAVY COATING**



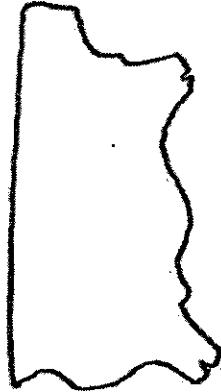
## FIRST GRADE

**-DEFECTS  
CAUSED BY  
PUTREFACTION**

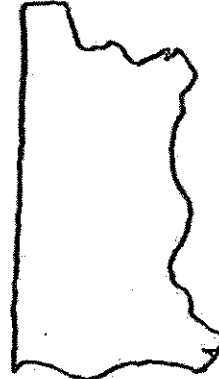
**-DEFECTS  
CAUSED BY DUNG  
URINE OR DIRT**

**-BRAND MARKS,**

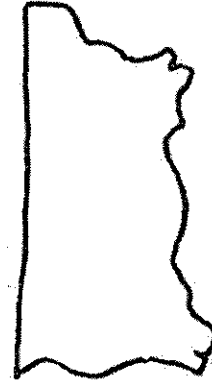
**-NO TANNING  
DEFECTS**



**NO SIGN OF  
DEFECTS AND  
PUTREFACTION**



**CLEAN**



**NO BRAND  
MARKS NO  
TANNING  
DEFECTS**

**SUITABLE FOR FULL GRAIN ANILINE LEATHERS**

**FIRST GRADE**

**WARBLES**



**MAXIMUM 3 BLIND WARBLES**

**SUITABLE FOR FULL GRAIN ANILINE LEATHERS**



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**FIRST GRADE**

**SCORE MARKS  
HOLES**



**FEW SCOREMARKS OR ONE SMALL HOLE**

**SUITABLE FOR FULL GRAIN ANILINE LEATHERS**



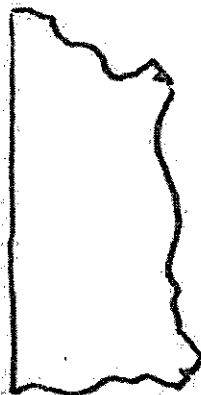
## SECOND GRADE

-DEFECTS CAUSED BY PUTREFACTION

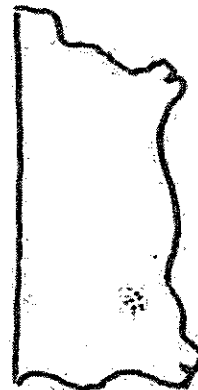
-DEFECTS CAUSED BY DUNG URINE OR DIRT

-BRAND MARKS

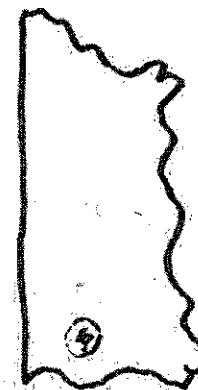
-TANNING DEFECTS



NO SIGNS OF DEFECTS AND PUTREFACTION



DUNG URINE OR DIRT DEFECTS MAX 15X15 CM



BRAND MARKS ONE SMALL MARK ALLOWED

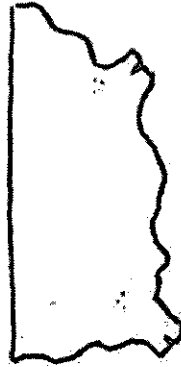
NO TANNING DEFECTS

SUITABLE FOR SEMIANILINE AND LIGHTLY CORRECTED GRAIN LEATHERS WITH HAIRCELL PRINT.



## SECOND GRADE

WARBLES



MAXIMUM  
OF FIVE  
OPEN  
WARBLES



MAXIMUM OF  
TEN BLIND  
WARBLES



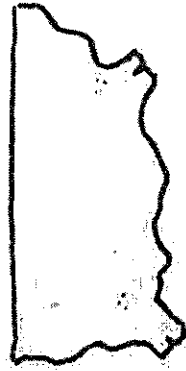
MAXIMUM OF  
TEN BLIND  
WARBLES. NO  
TANNING  
DEFECTS

SUITABLE FOR SEMIANILINE AND LIGHTLY CORRECTED GRAIN  
LEATHERS WITH HAIRCELL PRINT.



## SECOND GRADE

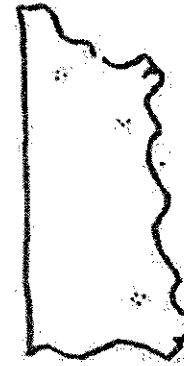
WARBLES



MAXIMUM  
OF FIVE  
OPEN  
WARBLES



MAXIMUM OF  
TEN BLIND  
WARBLES



MAXIMUM OF  
TEN BLIND  
WARBLES. NO  
TANNING  
DEFECTS

SUITABLE FOR SEMIANILINE AND LIGHTLY CORRECTED GRAIN  
LEATHERS WITH HAIRCELL PRINT.





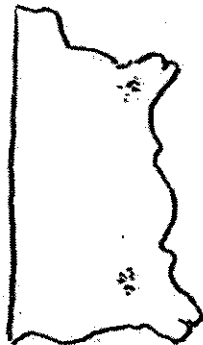
## THIRD GRADE

1. DEFECTS CAUSED BY PUTREFACTION

2. DEFECTS CAUSED BY DUNG URINE OR DIRT

3. BRAND MARKS

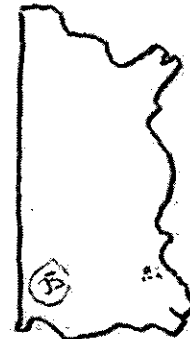
- SOME TANNING DEFECTS ALLOWED, SUCH AS SLIGHT VARIATION IN SUBSTANCE



SOME DEFECTS CAUSED BY PUTREFACTION



SOME DEFECTS CAUSED BY DUNG, URINE OR DIRT MAX TWO DEFECTS NOT EXCEEDING 15X15 CM



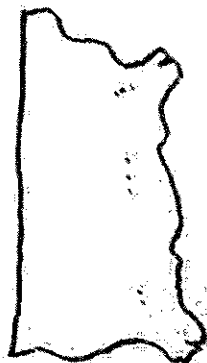
BRAND MARKS

SUITABLE FOR BUFFED, PLATED AND CORRECTED GRAIN LEATHERS WITH MEDIUM HEAVY PRINT



### THIRD GRADE

WARBLES



MORE THAN 5  
OPEN WARBLER



MORE THAN 10  
BLIND WARBLER



MORE THAN 10  
BLIND WARBLER

WITH MORE THAN FIVE OPEN WARBLER AND MORE THAN  
TEN BLIND WARBLER

SUITABLE FOR BUFFED, PLATED AND CORRECTED  
GRAIN LEATHERS WITH MEDIUM HEAVY PRINT

## THIRD GRADE

- SCARS, TICK MARKS,  
RINGWORMS, ETC
- BRUISES, SCRATCHES  
WOUNDS, ETC
- FLAY CUTS



DEFECTS FROM GROUP 1 & 2 (EXCEPT BRAND MARKS) UP TO 30%  
OF THE TOTAL HIDE AREA

SUITABLE FOR BUFFED, PLATED AND CORRECTED  
GRAIN LEATHERS WITH MEDIUM HEAVY PRINT



## FOURTH GRADE

1. DEFECTS CAUSED BY PUTREFACTION

2. DEFECTS CAUSED BY DUNG URINE OR DIRT

3. POOR PARTTEN & BRAND MARKS

-TANNING DEFECTS SUCH AS THICKNES VARIATIONS DUE TO SPLITTING AND SHAVING ARE ALLOWED

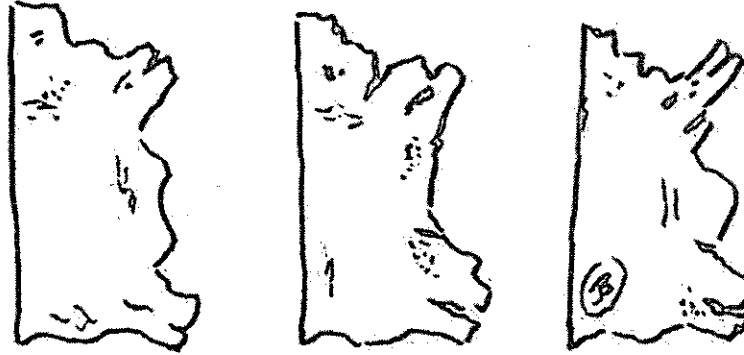


SUITABLE FOR CORRECTED GRAIN, PRINTED LEATHERS WITH SIDESPRAYING AND ANTIQUE EFFECTS WITH HEAVY COATING



## FOURTH GRADE

-PREMORTEM AND  
POST MORTEM  
DEFECTS, NATURAL  
DEFECTS,  
MECHANICAL  
DEFECTS, FLAYING  
DEFECTS, BRANDS,  
POOR PATTERN,  
SALT AND CHROM  
STAINS



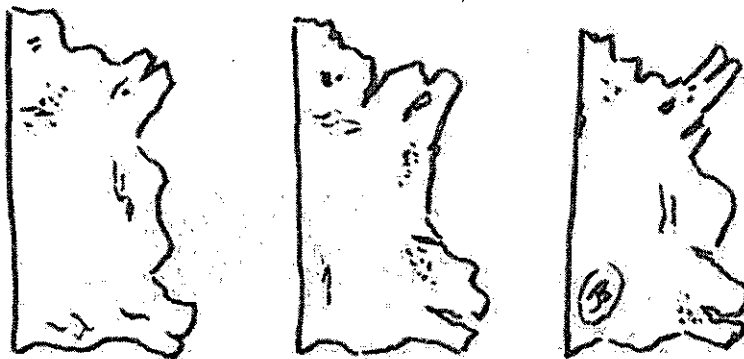
ANY KIND OF DEFECTS COVERING UP TO 40% OF THE  
TOTAL LEATHER AREA.

SUITABLE FOR CORRECTED GRAIN, PRINTED LEATHERS  
WITH SIDESPRAYING AND ANTIQUE EFFECTS WITH  
HEAVY COATING



## FOURTH GRADE

-PREMORTEM AND  
POST MORTEM  
DEFECTS, NATURAL  
DEFECTS,  
MECHANICAL  
DEFECTS, FLAYING  
DEFECTS, BRANDS,  
POOR PATTERN,  
SALT AND CHROM  
STAINS



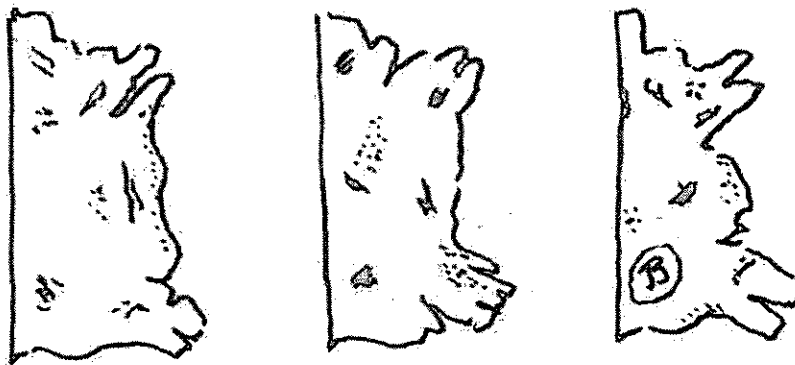
ANY KIND OF DEFECTS COVERING UP TO 40% OF THE  
TOTAL LEATHER AREA.

SUITABLE FOR CORRECTED GRAIN, PRINTED LEATHERS  
WITH SIDESPRAYING AND ANTIQUE EFFECTS WITH  
HEAVY COATING



## FIFTH GRADE

-PREMORTEM AND  
POST MORTEM  
DEFECTS, NATURAL  
DEFECTS,  
MECHANICAL  
DEFECTS, FLAYING  
DEFECTS, BRANDS,  
POOR PATTERN,  
TANNING DEFECTS  
E.T.C.



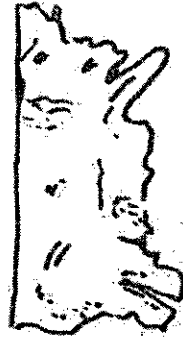
ANY KIND OF DEFECTS COVERING UP TO 50% OF THE  
TOTAL LEATHER AREA.

SUITABLE FOR DEEPLY CORRECTED GRAIN, HEAVILY  
PRINTED LEATHERS WITH HEAVY COATING



## SIXTH GRADE

-PREMORTEM AND  
POST MORTEM  
DEFECTS, NATURAL  
DEFECTS,  
MECHANICAL  
DEFECTS, FLAYING  
DEFECTS, BRANDS,  
POOR PATTERN,  
TANNING DEFECTS  
E.T.C.



ANY KIND OF DEFECTS COVERING UP TO 60% OF THE  
TOTAL HIDE AREA.

SUITABLE FOR DEEPLY CORRECTED GRAIN, HEAVILY  
PRINTED ARTICLES SUCH AS WORK BOOTS AND  
SIMILAR PRODUCTS.