

Experimental work

Table (2): Recycling of lime solution

Cycle No	PH	Hair removal	Degree of Swelling	
1	12.7	Complete	40	
2	12.5	Complete	38	
3	13.0	Complete	38	
4	12.9	Complete	35	
5	12.6	Complete	33	
6	12.5	Complete	37	
7	12.7	Complete	40	

Table (3):Deliming

Cycle No	PH	Finger print	Relaxation	6Completeness
1	8.0	permanent	flat grain	Colourless to phenolphthalein
2	8.2	permanent	flat grain	Colourless to phenolphthalein
3	8.0	permanent	flat grain	Colourless to phenolphthalein
4	8.5	permanent	flat grain	Colourless to phenolphthalein
5	8.3	permanent	flat grain	Colourless to phenolphthalein
6	8.0	permanent	flat grain	Colourless to phenolphthalein
7	8.4	permanent	flat grain	Colourless to phenolphthalein

Table (4):Chrome tannage :-

Cycle No	PH	Penetration	Relaxation	Completeness
1	3.8	Full	100c°	v. good
2	4.0	Full	100c°	v. good
3	4.2	Full	100c°	v. good
4	3.9	Full	100c°	v. good
5	3.9	Full	100c°	v. good
6	4.4	Full	100c°	v. good
7	4.3	Full	100c°	v. good

Table (5):Retannage :-

Cycle No	PH	Exhaustion		
1	4.8	clean solution		
2	5.0	clean solution		
3	5.2	clean solution		
4	5.5	clean solution		
5	5.0	clean solution		
6	4.9	clean solution		
7	5.0	clean solution		

Table (6):Physical Testing Of The Leather After The 7th Cycle: Sheep Skin :-

Batch No	Thickness, mm	Tensile strength Kg/cm2	Load at grain crack / Kg	Elongation at grain break	Load at burst /Kg
1	1.2	180	35	40	38
2	1.1	200	34	42	40
3	1.2	190	33	45	39
4	1.0	200	40	39	41
5	1.1	190	32	44	37

