

# RESTRAINT OF LEATHER SEAT CUSHIONS DURING APPENDIX F SEAT CUSHION (FIRE BLOCK) TESTING

COLOGNE UPDATE

# MATERIALS EVOLUTION

- ORIGINALLY – FIRE BLOCKED CUSHIONS
- FIRE HARD FOAM
- VARIABILITY OF RESULTS WITH LEATHER
- FULL CABIN USE OF LEATHER IN TRANSPORT TYPE AIRCRAFT
- “LEEWAY” IN RULES AND GUIDANCE ON FASTENING – EFFECT ON PASS OR FAIL

# “GOOD” LEATHER



# “BAD” LEATHER

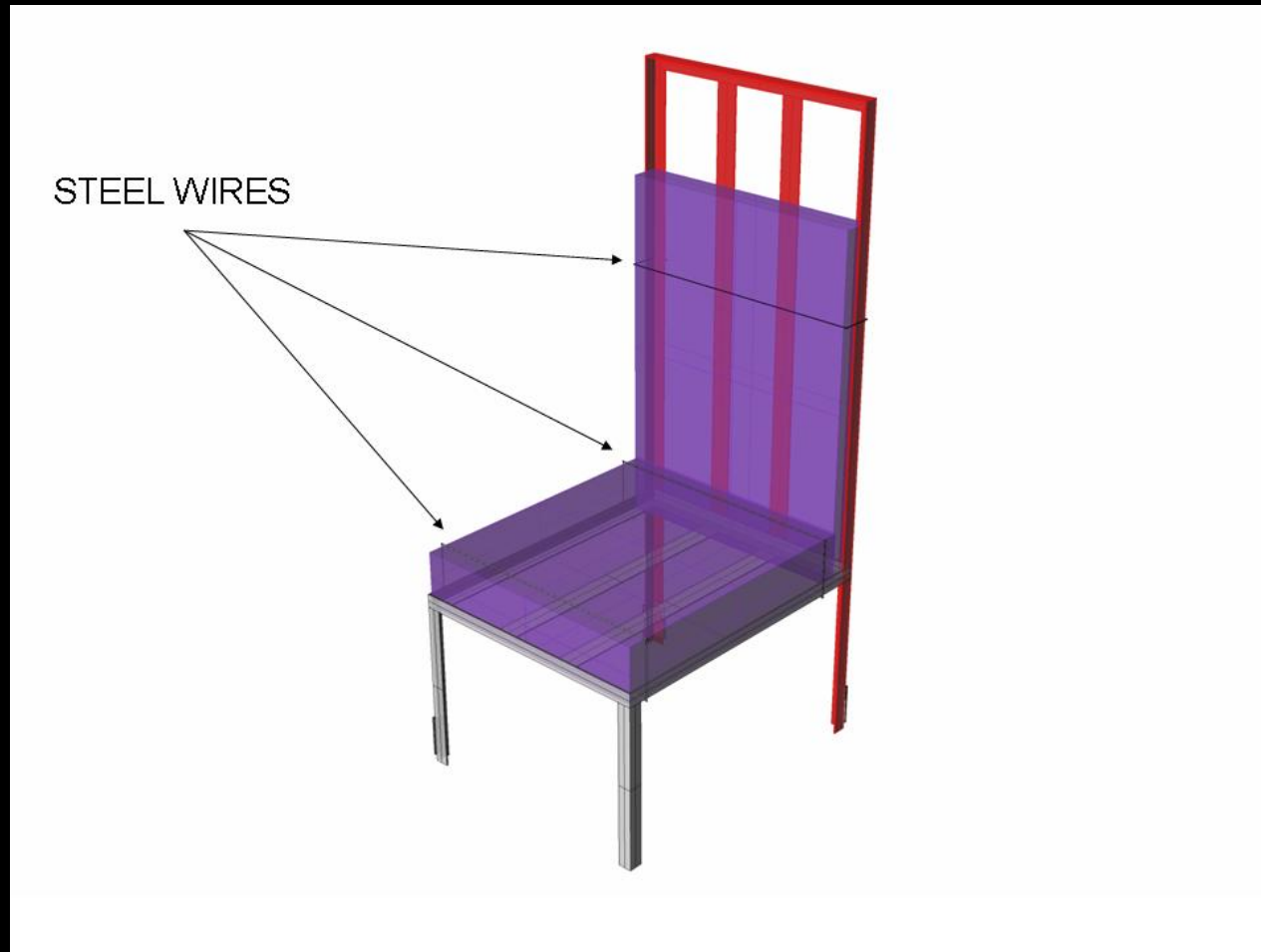




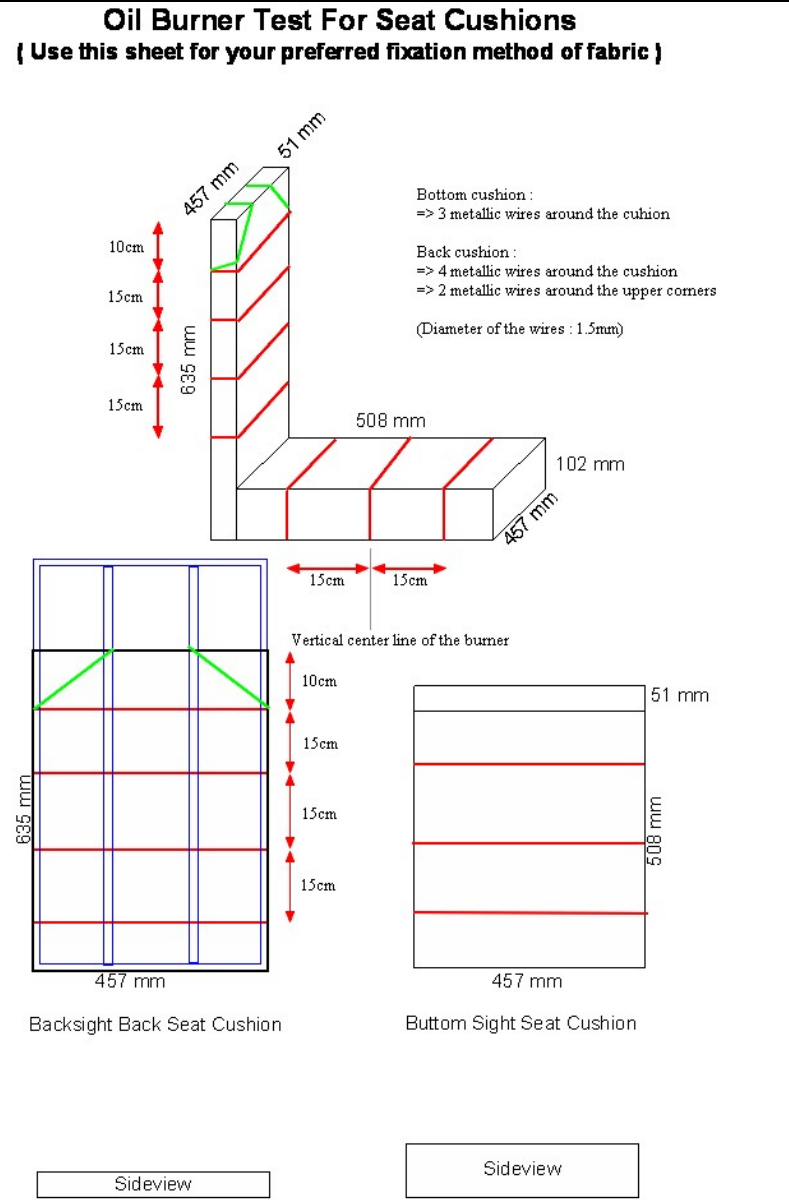
# TEST FASTENING METHODS



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# OBJECTIVES

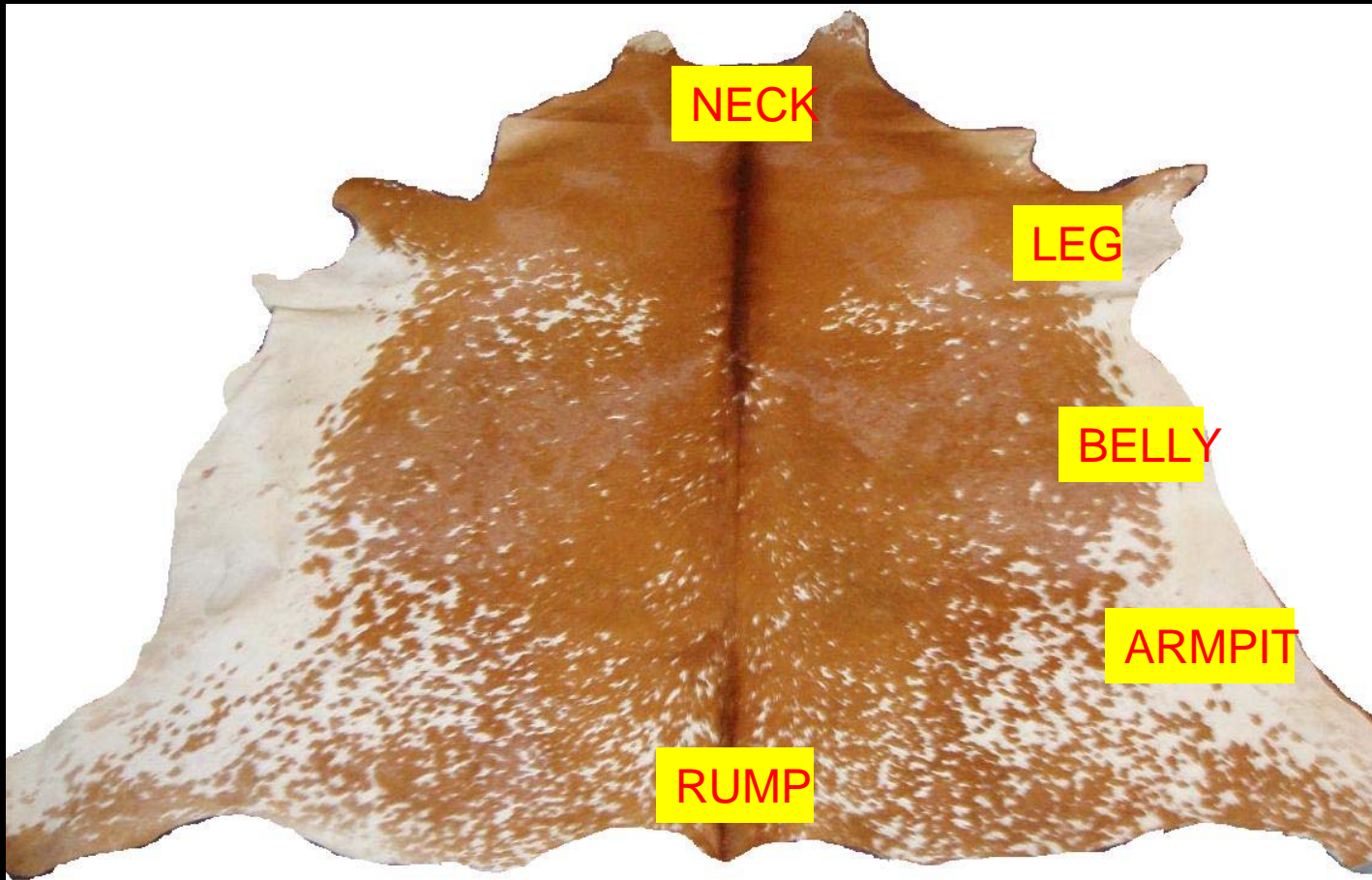
- REVIEW OF AVAILABLE INFORMATION ON THE SUBJECT (DONE)
- SURVEY - REAL WORLD FASTENING METHODS (DONE)
- SURVEY - LAB FASTENING METHODS (DONE)

# OBJECTIVES

- RESEARCH – LEATHER OR TOP-COAT SHRINKS? (CURRENT AND ONGOING)
- RESEARCH EFFECT OF NUMBER OF WIRES ON FABRIC AS BASELINE (CURRENT)

# SURVEY OF LEATHER PERFORMANCE

- 5 SAMPLES FROM EACH FULL HIDE:



# SURVEY OF LEATHER PERFORMANCE

- 12 SECOND VERTICAL
- 60 SECOND VERTICAL
- SHRINK LENGTH RECORDED
- SHRINK DEFINITION – DISTANCE FROM THE LOWEST POINT OF THE TOP OF THE SAMPLE TO THE HIGHEST UNCHARRED POINT AT THE BOTTOM OF THE SAMPLE, SUBTRACTED FROM THE INITIAL SAMPLE LENGTH
- FIRE BLOCK PERFORMANCE

# SURVEY OF LEATHER PERFORMANCE

	12 Sec. Test			60 Sec. Test		
	After Flame	Char	Shrinkage	After Flame	Char	Shrinkage
	Burn Time	Length	Length	Burn Time	Length	Length
NECK	0.43	0.15	0.42	0.58	4.58	1.27
RUMP	0.45	0.11	0.33	0.25	4.33	1.27
FRONT LEG	0.53	0.14	0.37	0.13	4.77	1.32
BELLY	0.47	0.16	0.42	0.73	4.80	1.64
REAR ARMPIT	0.53	0.13	0.40	0.22	4.49	1.04
AVERAGE	0.48	0.14	0.39	0.38	4.59	1.31
STD DEV	0.05	0.02	0.04	0.26	0.20	0.22
STD DEV % OF AVG	9%	13%	10%	67%	4%	16%

# SURVEY OF LEATHER PERFORMANCE

- SAME MANUFACTURER, DIFFERENT  
COLORS, SEVERAL HIDES EACH  
COLOR



# SURVEY OF LEATHER PERFORMANCE

- AS OIL BURNER TESTS DONE, RESULTS AND QUALITATIVE ASSESSMENT OF SHRINKAGE WILL BE RECORDED
- ONGOING DISCUSSION WITH MANUFACTURERS ABOUT CAUSES OF SHRINKAGE

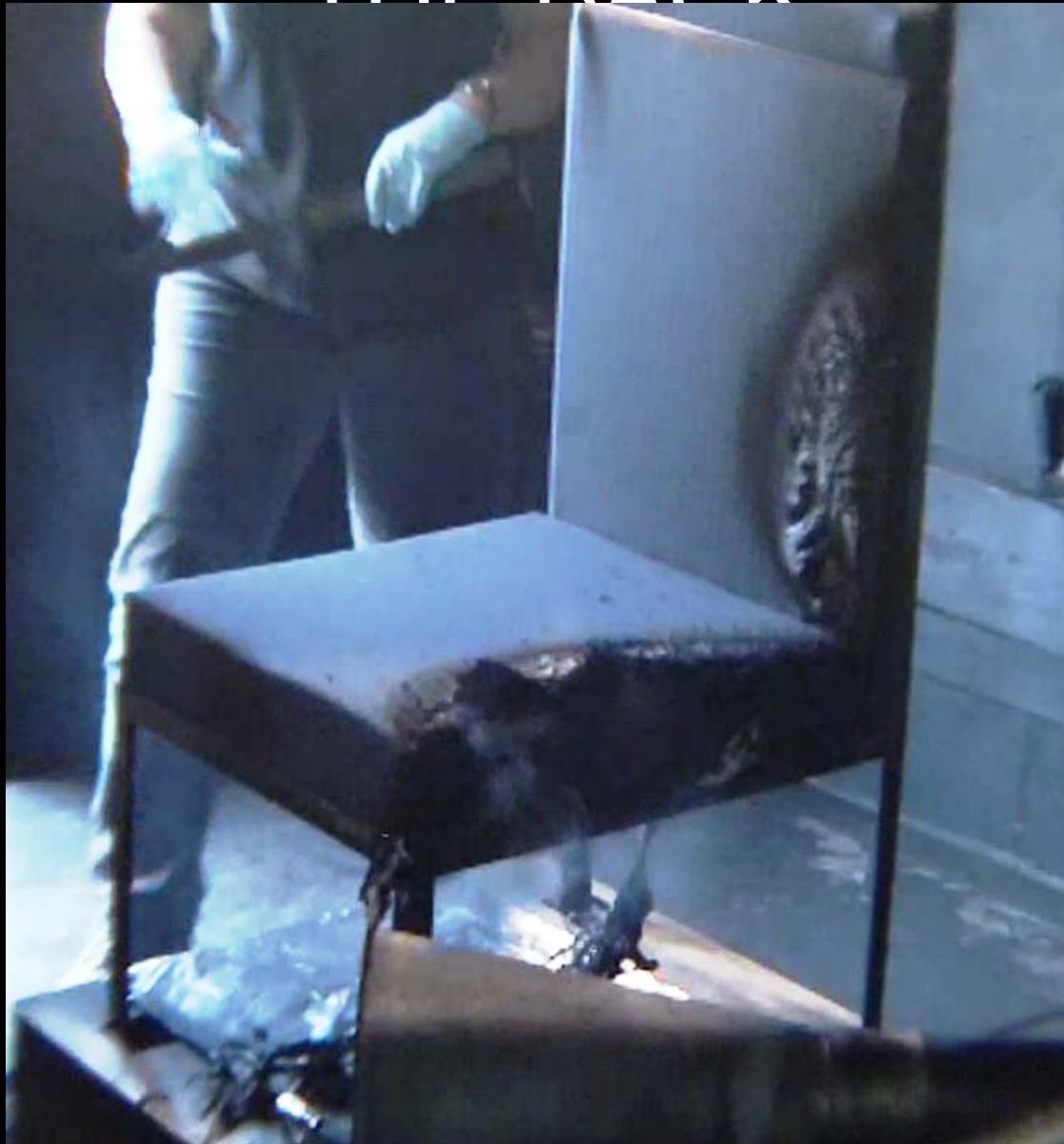


# EFFECT OF WIRES

## BASELINE TESTS ON FABRIC

- 6 SCENARIOS TESTED:
- SINGLE WIRE AT THE TOP OF THE BACK
- 3 LOOSE WIRES EACH, BACK AND BOTTOM
- 6 LOOSE WIRES EACH, BACK AND BOTTOM
- 3 TIGHT WIRES EACH, BACK AND BOTTOM
- 6 TIGHT WIRES EACH BACK AND

# SINGLE WIRE AT THE TOP OF THE BACK



# 3 LOOSE WIRES EACH, BACK AND BOTTOM

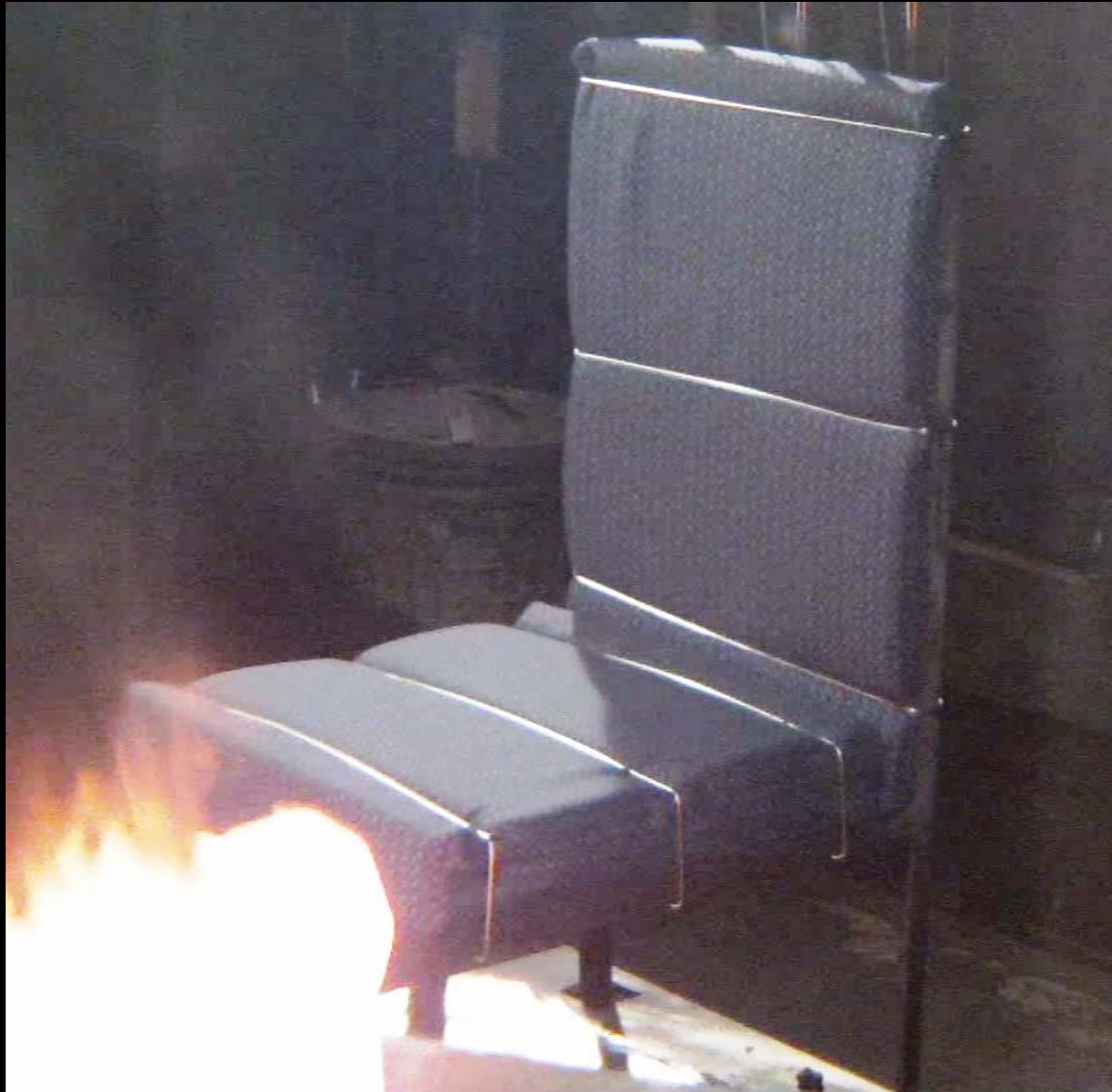


# 6 LOOSE WIRES EACH, BACK AND BOTTOM





# 3 TIGHT WIRES EACH, BACK AND BOTTOM



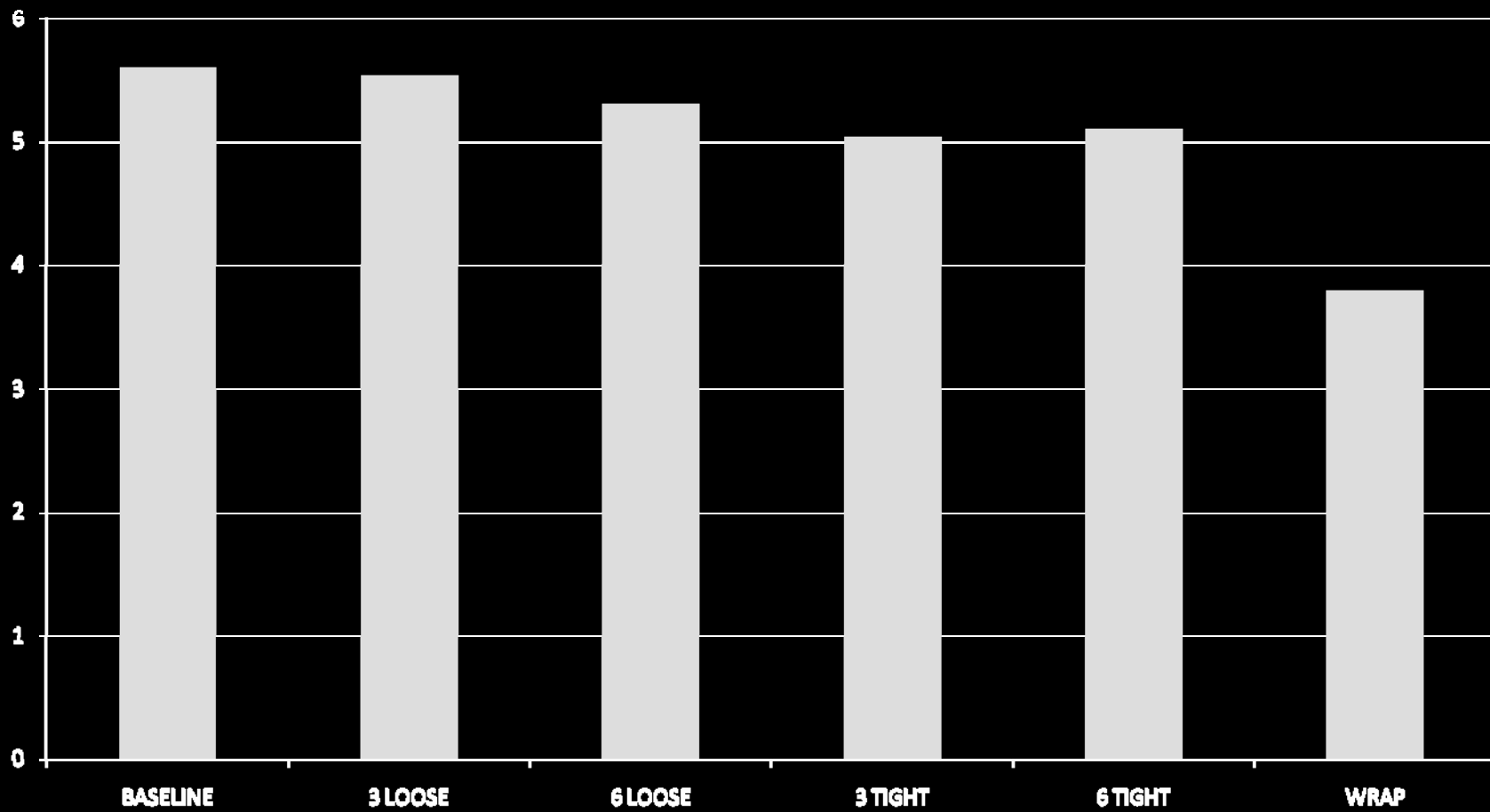
# 6 TIGHT WIRES EACH, BACK AND BOTTOM



# TRUSSED UP LIKE A CHRISTMAS TURKEY



# PERCENTAGE WEIGHT LOSS





# WHAT'S NEXT

- AGREE ON “PREFERRED METHOD” BY EMAIL, ONLINE GROUP:  
<http://tech.groups.yahoo.com/group/IAMFTWG/>
- GET LEATHER SUPPLIER – VOLUNTEERS?
- ROUND ROBIN – BEFORE NEXT MEETING ?
- EXPERIMENT – VELCRO FASTENING
- PRESENT RESULTS – FINAL

QUESTIONS?