PRIVATE SPECIFICATION

prepared for the

SOUTH AFRICAN NAVY

MEN'S TROUSERS, POLYESTER
(Service dress: White)

Original

SAN 070
Revised October 2008

1. Scope

This specification covers the material, cut and make of white service dress trousers (poly/viscose) for male personnel of the South African Navy.

2. Definitions

acceptable: acceptable to the Directorate Naval Logistics

nominal: subject to the tolerances normal to good manufacturing practice

3. Style

Tendere's comments

- separate waistband
  - plain
  - fastens with hook and bar on inside
  - centre back seam
  - belt loops
- front slide fastener fly
  - including french bearer
- pleated fronts
- two slanted side pockets
- one front fob pocket
- one back hip pocket
  - fastens with touch and close fastener
- two back darts
- inlays at centre back seam
- plain bottoms

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4. Illustrations

Tenderer's comments

5. Materials - General

Tenderer's comments

No materials will be supplied by the South African Navy (unless otherwise specified in the order or contract)

- The materials specified in 6 and 7 are to be supplied and used by the manufacturer (unless otherwise specified in the order or contract)

A trim chart containing a sample of each component material (as given in 7.1 to 7.8) shall accompany the pre-production samples

6. Outer material

The outer material to:

- be a 100% polyester that comply with the requirements of table 1
- be an acceptable white colour (as agreed upon between the South African Navy and the supplier)

Three metres of fabric shall be submitted for colour registration purposes: see Annex A

Table 1 – Material requirements (220g)

1	2	3
Property	Requirement	SANS number (unless otherwise indicated)
Composition, %		1833-1 and 1833-4
Polyester	100%	
Weave	2/2 Twill	Visual examination and physical analysis
Mass per unit area, g/m², min.	220	79
Number of threads per cm [a], min.		7211-2
Warp Weft	32 23,2	
Tensile strength, N, min.		13934-1
Warp Weft	1550 1350	
Dimensional changes, %, max.		
Laundering [c] Warp and weft direction	2	960 procedure C
Seam slippage, N, min.		5726
Warp Weft	230 300	
Colour fastness to:		
Light, rating, min.	4	105-B02
Washing [c], rating, min.		105-C10 (Test B(2))
Change in colour	4	
Perspiration, rating, min.		105-E04
Change in colour	4	
Resistance to abrasion	2500 rubs No breaks	6009

Tenderer's comments

7. Component materials

Tenderer's comments

7.1 Slide fasteners

- one-way closed-end
- synthetic elements
- comply with relevant requirements of class B slide fasteners of SANS 1822 "Slide fasteners"
- colour to be an acceptable match to the colour of the outer material

7.2 Interlining

- fusible woven or non-woven interlining
- to comply with the requirements of CKS 627 "Fusible interlinings"
- suitable for use in garments which may be washed or dry-cleaned
- colour to be white

The selection of interlining of appropriate mass per unit area to be determined by consultation with the supplier of the interlining.

7.3 Waistband lining

- acceptable synthetic waistband lining
  - to incorporate a 10 mm rubber insert
- bias-cut
- of width 45 mm (when sewn down)
- colour to be an acceptable match to the colour of the outer material

7.4 Buttons

- four-hole plastics
- nominal diameter of 14 mm
- dope-dyed
- fully impregnated
- colour to be an acceptable match to the colour of the outer material

7.5 Pocketing

- to comply with the requirements of SANS 1008 "Warp-knitted pocketing"
- colour to be white

Tenderer's comments

7.6 Hook and bar

- metal with a smooth finish
- corrosion resistant
- bar to be of nominal length 13 mm

7.7 Touch and close fastener

- to comply with the relevant requirements of SANS 1823 "Touch-and-close fasteners"
- of nominal width 20 mm
- colour to be white

7.8 Threads

- to comply with relevant requirements of SANS 1362 "Sewing threads"
- colour to be an acceptable match to the colour with which it is used

sewing and top-stitching thread:

- polyester-and-cotton core-spun

OR

- staple polyester
- ticket No 80

overlocking thread:

- crimp-textured polyester

OR

- crimp-textured polyamide
- ticket No 140

8. Workmanship

Tenderer's comments

The trousers shall be:

- cut and made with first-class workmanship throughout
- of uniform and acceptable make, colour and finish

Shall be free from:

- defects, that affect their appearance or may affect their serviceability (or both)
- marks
- spots
- stains, incurred in the making-up

Seams and stitches shall be:

- smooth and uniform
- free from twists, pleats and puckers
- sufficiently extensible to avoid seam cracking and undue shrinkage in use

Ends of sewing shall be:

- trimmed and loose threads removed
- back-tacked if unsecured

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9. Sizes

Tenderer's comment

Trouser measurements:

MEASURING POINT		DESCRIPTION
A - A	Waist circumference	Measure across at the top edge of the waistband and multiply by two.
D – D	Seat circumference	Measure across the width of the garment with open pleats, at seat level (widest point), and multiply by two.
B – B	Inside leg length	Measure from the crotch seam to the bottom edge of the leg.
A – C	Outside leg length	Measure from the top edge of the waistband to the bottom edge of the leg.
B – C	Bottom hem circumference	Measure across the width at the bottom edge of the garment and multiply by two.

Table 2 - size range

1	2	3	4	5	6	7
NSN	Size Designation[1)]	Nominal finished garment measurements, cm				
		Waist Circum-ference	Seat Circumference	Inside Leg Length	Outside Leg Length	Bottom Hem Circum-ference
	Regular Short					
8405-18-178-9900	67/74	67	91	74	101	42
8405-18-178-9903	72/74	72	96	74	101	43
8405-18-178-9904	77/74	77	101	74	102	44
8405-18-178-9905	82/74	82	106	74	102	45
8405-18-178-9907	87/74	87	111	74	103	46
8405-18-178-9908	92/74	92	116	74	103	46
8405-18-178-9909	97/74	97	121	74	104	47
8405-18-178-9910	102/74	102	126	74	104	47
8405-18-178-9916	107/74	107	131	74	105	48
8405-18-178-9917	112/74	112	136	74	106	48
8405-18-178-9918	117/74	117	141	74	107	49
8405-18-178-9919	122/74	122	146	74	108	49
8405-18-178-9924	127/74	127	151	74	109	50
	Regular Regular					
8405-18-178-9928	67/79	67	91	79	106	42
8405-18-178-9930	72/79	72	96	79	106	43
8405-18-178-9931	77/79	77	101	79	107	44
8405-18-178-9933	82/79	82	106	79	107	45
8405-18-178-9938	87/79	87	111	79	108	46
8405-18-178-9947	92/79	92	116	79	108	46
8405-18-178-9954	97/79	97	121	79	109	47
8405-18-178-9958	102/79	102	126	79	109	47
8405-18-178-9961	107/79	107	131	79	110	48
8405-18-178-9966	112/79	112	136	79	111	48
8405-18-178-9971	117/79	117	141	79	112	49
8405-18-178-9973	122/79	122	146	79	113	49
8405-18-178-9974	127/79	127	151	79	114	50

Table 2 continues/

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/ Table 2 continued

1	2	3	4	5	6	7
NSN	Size Designation [1]	Nominal finished garment measurements, cm				
		Waist Circum-ference	Seat Circum-ference	Inside Leg Length	Outside Leg Length	Bottom Hem Circum-ference
	Regular long					
8405-18-178-9977	67/84	67	91	84	111	42
8405-18-178-9978	72/84	72	96	84	111	43
8405-18-179-0093	77/84	77	101	84	112	44
8405-18-179-0094	82/84	82	106	84	112	45
8405-18-179-0095	87/84	87	111	84	113	46
8405-18-179-0096	92/84	92	116	84	113	46
8405-18-179-0097	97/84	97	121	84	114	47
8405-18-179-0098	102/84	102	126	84	114	47
8405-18-179-0099	107/84	107	131	84	115	48
8405-18-179-0101	112/84	112	136	84	116	48
8405-18-179-0104	117/84	117	141	84	117	49
8405-18-179-0102	122/84	122	146	84	118	49
8405-18-179-0106	127/84	127	151	84	119	50

1) Based on the figure type, height, waist, and inside leg length, in centimetres, of the intended wearer.

Tenderer's comments

10. Make

Illustrations are not to scale and are for guidance only, and unless inconsistent with the text, all measurements are nominal.

Tenderer's comments

10.1 Fronts

Fronts to:

- have a fly opening
- fasten with a slide fastener
- each have a reverse pleat
- each have a slanted side pocket
- have a fob pocket **(right front only)**

The fly to be:

- lined with outer material
- interlined with interlining
- of finished width 50 mm
- sewn down 30 mm from the front edge
- fitted with a slide fastener
- overlapping left over right
- vertically bar-tacked at the bottom
- overlocked on the free edges

The fly-catch to:

- be of outer material
- be of finished width 40 mm (measured from the front-to-fly-catch seam)
- be overlocked on the free edges
- be edge-stitched 2 mm from free edge
- be lined with pocketing
  - folded to width of 20 mm below bar-tack
  - carried through to crotch
  - stitched to crotch

Right front

- have a french bearer
  - sandwiched between fly-catch and fly-catch lining
  - rounded at the free end
  - of outer material
  - lined with outer material
  - interlined with interlining
  - of finished width 65 mm at fly catch edge
  - tapering to 35 mm (width measured in the center of the buttonhole)
  - positioned with top edge 20 mm below the waistband seam
  - edge-stitched 2 mm along free edges
  - fitted with a buttonhole
    - → trouser type
    - → 17 mm long
    - → horizontal
    - → centrally positioned and 10 mm from the front edge

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Tenderer's comments

The pleats to be:

- reverse pleats
- stitched down 25 mm
- positioned in line with crease line
  - of finished depth 20 mm

The right front to have:

- a fob pocket

10.2 Back

Each back to:

- have a dart
  - of finished length 75 mm
  - of finished depth 10 mm

The right back to:

- have a hip pocket

10.3 Waistband

Waistband to:

- be cut separately and sewn on
- be of finished width 40 mm
- be lined with waistband lining
  - turned inwards 15 mm
  - sewn down
- be interlined with interlining
- be fitted with one button on the inside to accommodate the french bearer
  - in corresponding position to that of the buttonhole
- left front raw edge to be folded in 15 mm, turned inwards
  - level with overlocked edge of fly
- right front edge boxed
- fasten with hook and bar on inside (not visible on outside)

Left front – inside view of fly

Right front – inside view of fly-catch

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Tenderer's comments

10.4 Pockets

Each pair of trousers to have:

- two side pockets
- one hip pocket
- one fob pocket

Side pockets

Each pocket mouth to be/have:

- slanted
- positioned with the top edge 30 mm forward of the side seam
- horizontally bar-tacked on each end
- top-stitched 6 mm from free edge
- of finished length 17 cm on trousers of size designation **87 and smaller**
- of finished length 18 cm on trousers of size designation **92 and larger**
- stayed with staytape or interlining
- a bearer
  - of outer material
  - of finished width 80 mm (measured at the top edge)
  - tapering to 40 mm (measured 40 mm below the lower bar-tack)
  - raw edges to be folded in and attached to the pocket bags
- faced with outer material
  - raw edges overlocked and attached to the pocket bags
  - of finished width 40 mm (measured at the top edge)

Each pocket bag to be:

- of double folded pocketing
- swing type
- of finished width (measured below the lower bar-tack):
  - 14 cm on trousers of size designation **87 and smaller**
  - 15 cm on trousers of size designation **92 and larger**

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Tenderer's comments

- of finished depth (measured below the lower bar-tack):
  - 15 cm on trousers of size designation **87 and smaller**
  - 16 cm on trousers of size designation **92 and larger**
- carried to the waistband lining (upper edges of pocket bags)
- bagged out or bound with binding (raw edges)

Bagged pocket

Hip pocket

The pocket mouth to:

- be horizontal
- be positioned on the right back section
- be centrally positioned at the base of the back dart
  - 75 mm below waistband
- be double-jetted
- be vertically bar-tacked on each end
- be of finished width:
  - 13 cm on trousers of size designation **87 and smaller**
  - 15 cm on trousers of size designation **92 and larger**
- have a bearer
  - of outer material
  - of finished depth 60 mm
  - raw edges folded in and stitched to the pocket bag
- fasten with touch and close fastener
  - of length 30 mm
  - positioned with the male section of the touch and close fastener 15 mm below the pocket mouth opening on the inside of the pocket bag
  - positioned with the female section in a corresponding position to that of the male section (positioned on the bearer)

Tenderer's comments

The pocket bag to be:

- of pocketing
- of finished width:
  - 15 cm on trousers of size designation **87 and smaller**
  - 17 cm on trousers of size designation **92 and larger**
- of finished depth:
  - 15 cm on trousers of size designation **87 and smaller**
  - 18 cm on trousers of size designation **92 and larger**
- carried to the waistband lining (upper edges of pocket bags)
- bagged out or bound with binding (raw edges)

Fob pocket

The fob pocket to:

- be positioned in the waistband-to-body seam
  - centrally positioned behind the pleat
- have a pocket bag of pocketing
  - of finished width and length 10 cm
- have a pocket mouth of 80 mm
  - faced with outer material
    - → of finished depth 30 mm
    - → bottom edge to be overlocked
    - → positioned on top of pocketing
    - → along full width of pocket
  - have a bearer of outer material
    - → of finished depth 30 mm
    - → bottom edge to be overlocked
    - → positioned on top of pocketing
    - → along full width of pocket
- be vertically bar-tacked at each mouth end
- bagged out or bound with binding (raw edges)

10.5 Belt loops

Belt loops to be:

- of double folded outer material
- of finished width 12 mm
- top-stitched 2 mm from free edges
- of finished length 45 mm

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Tenderer's comments

- secured in the waistband seam
  - folded up, turned in and bar-tacked 3 mm from turned-in edge (folded in 10 mm at the top)
  - turned-in edge level with top edge of waistband

Number of belt loops:

- six on trousers of size designation **87 and smaller**
- eight on trousers of size designation **92 and larger**

Six belt loops to be positioned:

- one on each front, in line with front crease and pleat
- one at each side seam (stitched to the back)
- one 50 mm away from the centre back seam (on both sides)

Positioning of belt loops: size designation 87 and smaller

Eight belt loops to be positioned:

- one on each front, in line with front crease and pleat
- one at each side seam (stitched to the back)
- one 50 mm away from the centre back seam (on both sides)
- one on each back, positioned midway between the side seam loop and the loop closer to the centre back

Positioning of belt loops: size designation 92 and larger

10.6 Inlays

Tenderer's comments

- to be at waistband, waistband lining and centre back seat seam
- to be of finished width 40 mm (80 mm = total width)

10.7 Bottoms

The bottoms to be:

- plain
- of finished depth 50 mm
- blind-felled
- raw edges to be overlocked

11. Stitches, seams and stitchings

11.1 Stitches

side and leg seams: safety stitch

overlocking: three-thread overlocking stitch

other stitches: single needle lock stitch

11.2 Seams

Seams to be at least 10 mm wide:

Side seams, inside leg seam and seat seam: seam type SSa followed by EFd

Superimpose two or more plies of material and seam with the appropriate number of rows of stitches positioned at the specific distance(s) from the aligned edges.

Stitch over the edge of a ply of material with one row of stitches

Fob pocket mouth: seam type SSe-2

Form seam type SSa-1, using two plies of material. Then turn back each ply at the seam and seam through the turned edges with the appropriate number of rows of stitches.

Tenderer's comments

Pocket bags: seam type SSae-2 **OR** BSe-2

Form seam type SSa-1, using two plies of material. Then turn back each ply at the seam and seam with the appropriate number of rows of stitches, ensuring that when one row of stitches is used, one row passes through the folded edges (SSae-2).

Turn in both sides of a binding strip, fold it round the aligned edges of plies of material, seam with one row of stitches, and seam the plies of material with another row of stitches, positioned clear of the strip (BSe-2).

Side pocket mouths: stitching type SSbc-1

Superimpose two plies of material, turn the specified width at the edge of one ply over the edge of the second ply, and seam with the appropriate number of rows of stitches.

Crotch seam: seam type BSe-2

Other seams: seam type SSa

11.3 Stitchings

all exposed raw edges: stitching type EFc

Stitch over the edge of a ply of material with one row of stitches.

Bottom hems: stitching type EFd, followed by EFl

Fold back the edge of a ply of material and so stitch with one row of stitches that the stitches overedge the edge, the needle only partially penetrates the body material, and the stitches do not show on the outer surface of the material

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Tenderer's comments

11.4 Number of stitches

seaming and top-stitching: 40 ± 4 per 10 cm

overlocking: 32 ± 4 per 10 cm

bar-tacks: 22 ± 2 per 1 cm

buttons: 16 ± 1 per button

buttonholes: 12 ± 1 per 1 cm

12. Packing, care-labelling and marking

12.1 Packing

The trousers shall be:

- delivered in a commercially dry condition
- so packed that they will not be damaged in transit or in storage
- neatly folded and individually packed in a plastics envelope of suitable size and shape
- unless otherwise specified in the order or contract, acceptably packed (in units of 10) for transportation in acceptable bulk containers that complies with the requirements as specified in RSA-MIL-SPEC 296 "Corrugated board boxes for clothing"

Trousers:

- of the same size designation to be packed together in a bulk container (unless quantities ordered are such that packing together of the same size only is not justified)
- of different size designations may also be packed together to accommodate the last part of an order or contract

12.2 Care-labelling

- Each garment to have a woven or printed label that is permanently secured and that provides (in accordance with SANS 10011 "Care-labelling of textiles and clothing") correct and appropriate care instructions
- printed labels to comply with the requirements of SANS 1309 "Printed labels for textiles"
- all care-labels and their markings to be such that they outlast the garments
- all care instructions shall be shown in words and in symbols

12.3 Marking

12.3.1 Trousers:

Each pair of trousers to have, secured to the waistband seam, a woven fabric label that complies with the requirements of SANS 1309 "Printed labels for textiles", and provides the following information in legible and indelible block letters of height at least 3 mm:

- the manufacturer's name or trade mark or both
- the size designation
- the composition of the fabric
  - information that complies with the requirements of SANS 10235 "Fibre-content

Tenderer's comments

- labelling of textiles and textile products"
- the year of manufacture
- the VAT no. of the manufacturer
- the country of origin

12.3.2 Envelopes

Each envelope to be clearly marked with the following information:

- the designation, i.e "Men's trousers, Poly/Viscose (Service dress: White)"
- the size designation

12.3.3 Containers

Each bulk container to have a label securely attached to the outside visible when the containers are stacked and providing information as specified in RSA-MIL-SPEC 296 "Corrugated board boxes for clothing".

12.4 Additional marking

When so required by the South African Navy, trousers, envelopes or containers (or any combination of these) to bear information additional to that specified above.

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13. Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this specification. All standards are subject to revision and, since any reference to a standard is deemed to be a reference to the latest edition of a standard, parties to agreements based on this specification are encouraged to take steps to ensure the use of the most recent editions of the standards indicated below. Information on currently valid national and international standards may be obtained from Standards South Africa.

RSA-MIL-SPEC 296, *Corrugated board boxes for clothing.*

CKS 627, *Fusible interlinings.*

SANS 79 (SABS SM 79), *Textiles - Mass per unit area of conditioned fabrics.*

SANS 960, *Textiles - Dimensional stability during washing and drying procedures.*

SANS 105-C10, *Textiles - Tests for colour fastness Part C10: Colour fastness to washing with soap or soap and soda.*

SANS 105-B02/ISO 105-B02, *Textiles - Tests for colour fastness Part B02: Colour fastness to artificial light: Xenon arc fading lamp test.*

SANS 105-E04/ISO 105-E04, *Textiles - Tests for colour fastness Part E04: Colour fastness to perspiration*

SANS 1008, *Warp-knitted pocketing.*

SANS 1309, *Printed labels for textiles.*

SANS 1362, *Sewing threads.*

SANS 1822 (SABS 1822), *Slide fasteners.*

SANS 1823 (SABS 1823), *Touch and close fasteners.*

SANS 1833/ISO 1833 (SABS ISO 1833), *Textiles - Binary fibre mixtures - Quantitative chemical analysis.*

SANS 5726 (SABS SM 726), *Seaming properties of woven textile fabrics.*

SANS 6009 (SABS SM 1009), *Abrasion resistance of textile fabrics (Martindale test).*

SANS 7211-2/ISO 7211-2, *Textiles - Woven fabrics - Construction - Methods of analysis Part 2: Determination of number of threads per unit length.*

SANS 10011 (SABS 011), *Care-labelling of textiles and clothing.*

SANS 10076-6, *The assessment of defects in textile piece-goods and made-up articles Part 6: Defects in woven filament.*

SANS 10235 (SABS 0235), *Fibre-content labelling of textiles and textile products.*

SANS 13934-1/ISO 13934-1 (SABS ISO 13934-1), *Textiles - Tensile properties of fabrics - Part 1: Determination of maximum force and elongation at maximum force using the strip method.*

Annex A
(normative)

Special conditions of tender

A-1 General

A-1.1 Unless otherwise stated, the South African Bureau of Standards, shall be the inspecting authority.

A-1.2 Three pre-production sample trousers, shall have been inspected, tested and approved by the inspecting authority before bulk production is commenced. Each one of these samples shall be accompanied by a trim chart containing a sample of each component material (as given in 7) and the relevant certificates. Three metres of the outer material fabric shall also be submitted by the successful tenderer to make swatches for colour registration purposes. It shall be the duty of the manufacturer to give adequate notice to the inspecting authority of the availability of these samples.

A-1.3 The trousers shall be subject to inspection during the course of manufacture. The inspector shall, during normal working hours, be given all reasonable facilities for carrying out his duties and shall have the right of entry into the contractor's factory and the factory or works of any subcontractor where work on trousers supplied to this specification may be in progress.

A-1.4 The contractor shall inspect the finished trousers for compliance with the specification before submitting them to the inspecting authority for final inspection.

A-1.5 Before acceptance, the trousers shall have been inspected and tested by the inspecting authority and found to comply with the requirements of the specification.

A-1.6 Any applications for deviations from drawings or the specification, or any laid down process, treatment or procedures as set out in this specification, must be made to the SA Navy Office, Pretoria.

Documentation

One container of each consignment shall be marked "Documents" and shall, in addition to the trousers, contain the following

1) The packing slip/delivery note;
2) where applicable, the certificate(s) of conformance; and
3) a copy of the invoice containing the following:
   a) The order number
   b) The financial authority number
   c) a full description of the consignment, i.e items, size(s), quantity, etc.