PRIVATE SPECIFICATION

Prepared for the

South African Navy

MEN'S ACTION WORKING DRESS SHIRT, LONG SLEEVES (ROYAL BLUE)

SAN 094

Revised March 2006

1. Scope

This specification covers the material, cut and make of long sleeved, action working dress shirts for personnel of the South African Navy.

2. Definitions

For the purpose of this specification the definitions given in SANS 10371 "Terms and definitions for clothing" and the following shall apply:

acceptable: acceptable to the Directorate Naval Logistics

nominal: subject to the tolerances normal to good manufacturing practice

SANS: South African National Standard.

3. Style

Tenderer's comments

- jacket-type shirt
- front button fastening
  - six or seven buttons (depending on size)
- one-piece collar
- gladneck collar
- two breast pockets with flaps
- shoulder straps
- double yoke at back
- long sleeves
  - one-piece
  - fitted with an embroidered flag
  - fitted with a gusset
- separate cuffs
- straight bottom hem

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4. Illustrations

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5. Materials - General

Tenderer's comments

No materials will be supplied by the South African Navy, except for the embroidered national flags, NSN 8345-18 177-7789 (see Annex A)

- 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 section 7) must accompany the pre-production samples.

6. Outer material

The outer material shall:

- be an acceptable woven fabric that complies with the requirements given in table 1
- be treated with a fluorocarbon water repellent on the face side
- be of a colour that is a match, in terms of SANS 10076-1, "The assessment of defects in textile piece-goods and made-up articles Part 1: Defects of woven piece-goods (cellulosic and cellulosic blends)", to colour No. 31c-95 "Royal Blue" of CKS 129 "Colours for textiles" (unless otherwise permitted by the South African Navy)

Three metres of fabric must be submitted for colour re-registration purposes: see Annex A

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Table 1 — Requirements for outer material

1	2	3
Property	**Requirement**	**SANS standard** unless otherwise specified
Composition	All cotton	AATCC method 20
Weave	2/1 twill, S-direction	Visual examination
Mass per unit area, g/m², min.	170	79
Number of threads per centimetre,		7211-2
Warp, min.	40	
Weft [a]	25	
Breaking strength, N, min.		13934-1
Warp	800	
Weft	425	
Water repellency (spray test) [b] proofed side		5300
Rating, min.	4	
Dimensional changes, % max.		960, wash procedure C
Press dry		Drying procedure E
Warp and weft	2	
Tumble dry		Drying procedure F
Warp and weft	4	
Colour fastness to:		
Light, rating, min.	6	105-B02
Washing, rating, min.		105-C01
Colour change	4	
Staining	4	
Rubbing, rating, min.		105-X12
Dry	4	
Wet	4	

a) Subject to a tolerance of −10 %.

b) Wash test specimens five times in accordance with SANS 11108, procedure A, but at 40 ± 2 °C and using a hot iron after drying, before testing.

LAQ	Piece	Lot	10076-1
	8	6	

Tenderer's comments

7. Component materials

Tenderer's comments

7.1 Buttons

- four-hole plastics
- nominal diameter of 17 mm
- dope-dyed
- fully impregnated
- colour to be an acceptable match to the colour of the outer material

7.2 Threads

- to comply with relevant requirements of SANS 1362 "Sewing threads"
- garment: colour to be an acceptable match to colour of the outer material
- attachment of flag: colour to be white (as specified for the outer edge of the embroidered flag)

sewing, buttonhole and top-stitching thread:

- polyester-and-cotton core-spun or
- staple polyester thread
- ticket No 80 (in both cases)

overlocking thread:

- crimp-textured polyester
- ticket No 140

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8. Workmanship

The shirts 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

Measuring of shirts

MEASURING POINT		DESCRIPTION
A – A	Chest circumference	Measure at the base of the scye, with garment buttoned and spread completely flat, and multiply by two.
B – B	Back length	Measure from the centre back neck seam to the bottom edge of the garment.
C – C	Back width	Measure across the width of the back at the yoke-to-back panel seam, from sleeve seam to sleeve seam.
A – D	Sleeve length	Measure from the base of the scye to the outer edge of the cuff.
D – D	Cuff circumference	Measure along the outer edge of the buttoned cuff (fastened to the button) and multiply by two.
B – E	Depth of scye	Measure from the centre back neck to the level of the base of the scye.
F – F	Sleeve circumference	Measure across the width of the sleeve, at a 90° angle, 30 cm from the crown of the sleeve, and multiply by two.

Table 2 - size range

1	2	3	4	5	6	7	8	9
		Nominal finished garment measurements, cm						
Item control number	Size designation[1)]	Chest circumference	Back length	Back width	Sleeve length	Cuff circumference	Depth of scye	Sleeve circumference
8405-18-417-4232	**X-small** 77/82	95	75	42	52	22	26	40
8405-18-417-4233	**Small** 87/92	105	78	44	53	23	27	41
8405-18-417-4234	**Medium** 97/102	115	81	46	54	24	28	42
8405-18-417-4235	**Large** 107/112	125	84	48	55	25	29	43
8405-18-417-4236	**X-Large** 117/122	135	87	50	56	26	30	44
8405-18-417-8710	**XX-Large** 127/132	145	90	52	57	27	31	45
8405-18-417-8713	**XXX-Large** 137/142	155	93	54	58	28	32	46

1) Based on the chest circumference, in centimetres, of the intended wearer.

Tenderer's comments

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10. Make

Tenderer's comments

Illustrations are not to scale and are for guidance only.

10.1 Foreparts

Each forepart shall have:

- a patch pocket with flap
- a facing
  - cut separately **OR** grown-on
  - of finished width 20 mm at the shoulder seam
    → shaped to have a finished width of 45 mm at the bottom hem
  - folded over
  - inner edges overlocked (left loose)
  - a 5 mm edge-stitching
    → stitching to continue along gorge seam to 40 mm from end of facing
- six or seven buttons (right forepart only)
  - depending on size
- six or seven buttonholes (left forepart only)
  - depending on size
- a straight hem

Inside view of facing

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Tenderer's comments

10.2 Collar

Collar to be:

- glad-neck (sports-type)
- one-piece
- of outer material
- lined with outer material
- of finished depth 75 mm at the centre back
- of finished depth 75 mm at the points
- edge-stitched 5 mm around the free edges

Inside view of collar

10.3 Pockets

Each pocket to be:

- a patch pocket
- square cornered
- positioned with the top edge of the pocket 20 mm above the base of the scye
- positioned with the sides parallel to the front edge
- positioned:
  - on sizes X-Small and Small: 70 mm from the front edge of the shirt
  - on sizes Medium and Large: 75 mm from the front edge of the shirt
  - on sizes X-Large and XX-Large: 80 mm from the front edge of the shirt
  - on size XXX-Large: 85 mm from the front edge of the shirt
- of finished **depth**:
  - 13 cm on sizes X-small and Small
  - 15 cm on sizes Medium and larger
- of finished **width** :
  - 12 cm on sizes X-small and Small
  - 14 cm on sizes Medium and larger
- folded in 6 mm along the sides and bottom raw edges
- attached to the forepart with a 2 mm edge-stitched along sides and bottom edges

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Tenderer's comments

Each pocket to have:

- a 20 mm pocket mouth hem
  - stitched down
- a bar-tack on each pocket mouth end
  - vertically positioned
  - positioned over 2 mm edge-stitching
- a button

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10.4 Pocket flaps

Tenderer's comments

Flaps to be:

- lined with outer material
- square cornered
- of finished depth 50 mm
- of finished width 13 cm
- positioned in such a way that there is a 10 mm gap between the top edge of the pocket and the stitching that attaches the flap to the forepart

Each flap to have:

- a 5 mm stitching around the edges
- a fly
  - positioned on the underside of flap (lining)
  - positioned 10 mm below top edge of flap (refers to when flap is open)
  - of double folded outer material
  - a buttonhole
  - two vertical bar-tacks
    - → each positioned 40 mm away from buttonhole
    - → extending from the top edge of the fly

Closed flap

10.5 Back

The back to have:

- a double yoke
  - of finished depth 90 mm at centre back
  - of finished depth 80 mm at the shoulder seam
  - to be constructed in such a way that the shoulder seam is positioned 20 mm forward of the natural shoulder line
  - to measure 17 cm along the natural shoulder line on size Small 87/92 and shall grade proportionally on the other sizes
- a straight bottom hem

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Tenderer's comments

10.6 Shoulder straps

Shoulder straps to be:

- of outer material
- lined with outer material
- mitred at the free end
- of finished width 55 mm at shoulder seam
- tapering to 40 mm at the base of the mitre
- of minimum length 15 cm (measured from the shoulder seam to the end of the mitred point)
- sewn in with the sleeves
- positioned with the centre line of the shoulder strap 5 mm forward of the natural shoulder line (shoulder seam to be concealed)
- top-stitched 5 mm around the free edges
- fitted with a buttonhole

10.7 Sleeves

Sleeves to be:

- one-piece
- shirt-type
- set-in
- long

Sleeves to have:

- separate cuffs
- a hind-arm opening
- an embroidered flag
  - positioned on left sleeve only

Cuffs shall be/have:

- of outer material
- lined with outer material
- square corners
- of finished depth 65 mm
- top-stitched 5 mm around bottom and side edges
- top-stitched 1 mm and 5 mm around top edges
- fitted with a button and buttonhole

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Hind-arm opening shall be:

- centrally positioned in the hindarm
- fitted with a triangular gusset
  - shall be of an acceptable size that the cuff is easily folded upwards
- of finished length 20 cm (measured to the buttonhole)
- stitched 2 mm and 7 mm from the edges

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Tenderer's comments

Embroidered flag to be:

- sewn along all four sides
- centrally positioned over the width of the shoulder strap
- positioned 30 mm below crown of sleeve

10.8 Buttonholes

Buttonholes to be:

- neatly made
- barred at each end
- shirt-type buttonholes
- 20 mm long
- equidistantly spaced

One buttonhole to be:

- positioned in each shoulder strap
  - with the eye of the buttonhole at the base of the mitre
  - with the eye of the buttonhole 20 mm from the point of the mitre
- positioned in each pocket flap fly
  - centrally positioned in fly
  - vertical
  - positioned with top edge 5 mm below the top edge of fly (refers to when flap is open)
- positioned in each cuff
  - horizontal
  - centrally positioned in each cuff
  - positioned with the front edge of the buttonhole 10 mm away from the edge of the cuff

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Tenderer's comments

Size designation X-Small to Large: 6 buttonholes

- positioned on the left forepart
- vertical
- positioned 15 mm from the front edge
- equidistantly spaced
- positioned at 90 mm intervals
- top buttonholes positioned 10 cm below the gorge seam

Size designation X-Large to XXX-Large: 7 buttonholes

- positioned on the left forepart
- vertical
- positioned 15 mm from the front edge
- equidistantly spaced
- positioned at 90 mm intervals
- top buttonholes positioned 10 cm below the gorge seam

10.9 Buttons

Buttons to be:

- properly secured

One button to be:

- positioned on each side of the yoke
  - in corresponding positions to that of the shoulder strap buttonholes
- positioned in each pocket mouth hem
  - in corresponding positions to that of the pocket flap buttonhole
- positioned in each cuff
  - in corresponding positions to that of the buttonholes

Six buttons to be:

- positioned on shirts of size designation X-Small to Large
- positioned on the right forepart
- in corresponding positions to that of the buttonholes on the right forepart

Seven buttons to be:

- positioned on shirts of size designation X-Large to XXX-Large
- positioned on the right forepart
- in corresponding positions to that of the buttonholes on the right forepart

Two spare buttons to be:

- positioned on the right facing
- near the hem of the shirt

10.10 Hanger

Hanger to be:

- of outer material
- of finished length 75 mm
- of finished width 10 mm
- sewn in with the collar seam at the center back (on inside of garment)

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Tenderer's comments

10.11 Bottom hem

Hem to be:

- of finished width 20 mm
- straight

11. Stitches, seams and stitchings

11.1 Stitches

main seaming: safety stitch

overlocking: three-thread overlocking stitch

other stitches: single needle lock stitch

11.2 Seams

Seams to be at least 10 mm wide:

Shoulder, side, sleeve and sleeve-insertion seams: seam type SSa

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.

Collar and shoulder strap edges: 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.

Pockets to shirts: seam type LSd-1

Turn in the edge of one ply of material, lap it on the body of a second ply (at the specific distance from the edge of the second ply), and seam with the appropriate number of rows of stitches.

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Tenderer's comments

11.3 Stitchings

all exposed raw edges: stitching type EFd

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

Hems: stitching type EFb-1

Turn in the specified width at the edge of a ply of material, fold back the turned edge, and stitch the turned-in and folded portion with the appropriate number of rows of stitches.

11.4 Number of stitches

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

overlocking: 32 ± 4 per 10 cm

buttonholes: 12 ± 1 per 1 cm

buttons: 12 ± 1 per button

bar-tacks: 22 ± 2 per 1 cm

12. Packing, care-labelling and marking

12.1 Packing

Each shirt 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 comply with the requirements of RSA-MIL-SPEC 296 "Corrugated board boxes for clothing".

Shirts:

- 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

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Tenderer's comments

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

12.3 Marking

12.3.1 Shirts:

Each shirt to have, sewn to the yoke on the inside of the back, below the collar, 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 year of manufacture
- the National Stock Number
- the composition of the fabric
  - information that complies with the requirements of SANS 10235 "Fibre-content labelling of textiles and textile products"

12.3.2 Envelopes

Each envelope to be clearly marked with the following information:

- the designation, i.e "Men's AWD shirt, long sleeves (Royal blue)"
- the size designation
- the ICN number

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, shirts, 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.

AATCC method 20, *Fiber analysis: Qualitatives.*

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

CKS 129, *Colours for textiles.*

SANS 79, *Textiles - Mass per unit area of conditioned fabrics.*

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

SANS 105-C01, *Textiles - Tests for colour fastness Part C01: Colour fastness to washing Test 2.*

SANS 105-X12, *Textiles - Tests for colour fastness Part B02: Colour fastness to rubbing.*

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

SANS 1309 (SABS 1309), *Printed labels for textiles.*

SANS 1362 (SABS 1362), *Sewing threads.*

SANS 5300, *Water repellency of textile fabrics (Spray test).*

SANS 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 10076-1, *The assessment of defects in textile piece-goods and made-up articles Part 1: Defects of woven piece-goods (cellulosic and cellulosic blends).*

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

SANS 10371, *Terms and definitions for clothing.*

SANS 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 shirts, 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 must also be submitted by the successful tenderer to make swatches for colour re-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 Three embroidered national flags shall be supplied to the successful tenderer to be used for the three pre-production samples. The balance shall be supplied once the three pre-production samples have been approved, and on receipt of a written request.

A1-1.4 The shirts 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 shirts supplied to this specification may be in progress.

A-1.5 The contractor shall inspect the finished shirts for compliance with the specification before submitting them to the inspecting authority for final inspection.

A-1.6 Before acceptance, the shirts shall have been inspected and tested by the inspecting authority and found to comply with the requirements of the specification.

A-1.7 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.

A-2 Documentation

One container of each consignment shall be marked "Documents" and shall, in addition to the shirts, 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.