



TECH PACK

Panels exploded · binding, hem facing and overlock in place

TECHNICAL PACKAGE

G1 SLEEVELESS A-LINE TOP

A sleeveless top built to test one thing: whether a measured cloth changes the garment

LIBRARY PRESET → **PG1, MEASURED**

Pattern, measurements and figures all read from the CLO pattern file; fabric values from laboratory test, 20 September 2026

AUTHOR

Chenhao Zhou

STATUS

Proto 1 · Rev 1 · sample size M

MAIN FABRIC

PG1, 100% polyester three-proof twill

MEASURED

135.3 g/m² · 0.22 mm

TEACHING TUTORS

Mikha Mekler, Eva Feld, Ella Sharp

ISSUED

27 September 2026 · Rev 1, 11 October 2026

FRONT & BACK VIEW

FEATURES



CF · cut 1 · hem 98.3 cm

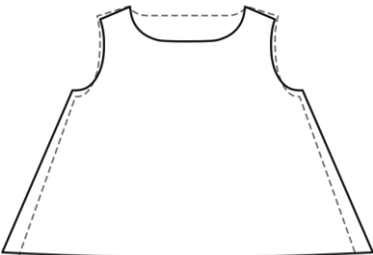


CB · cut 1 · hem 89.9 cm · slit 9.0 cm



SIDE

Style views exported from G1_techpack_stitched.zprj at Rev 1, stitching in place, no avatar, one camera distance for all three. The measured drawings are pages 4 and 5.



front, solid · back, dashed · on the centre and HPS lines

FRONT OVER BACK

Laid on the centre and HPS lines, the back is 8.4 cm narrower at the hem and 9.5 cm longer at the centre. Shoulders and underarms sit within 2 cm of each other, which is what lets the two panels sew.

I. Silhouette

A sleeveless top in one layer, cut straight from the shoulder and flaring from the underarm to a wide hem. Two panels only, joined at the shoulders and sides.

II. Neckline

Round neck with soft gathers drawn to the centre front and centre back, finished with a bias binding cut from the same cloth.

III. Volume

Hem 98.3 cm against a 63.2 cm chest: the flare is the point of the garment and the reason the cloth's bending behaviour matters more here than its strength.

IV. Closure

A 9 cm centre-back slit, one button and a thread loop. It opens the 46.0 cm neckline to 64.0 cm.

V. Why this fabric

PG1 was chosen because its measured mass sits between the two library presets a simulator would otherwise offer, 71 and 302 g/m², which differ from each other by more than four times.



PG1 at the test lab, specimens cut out; A and B mark the two test directions. Cream, as supplied.

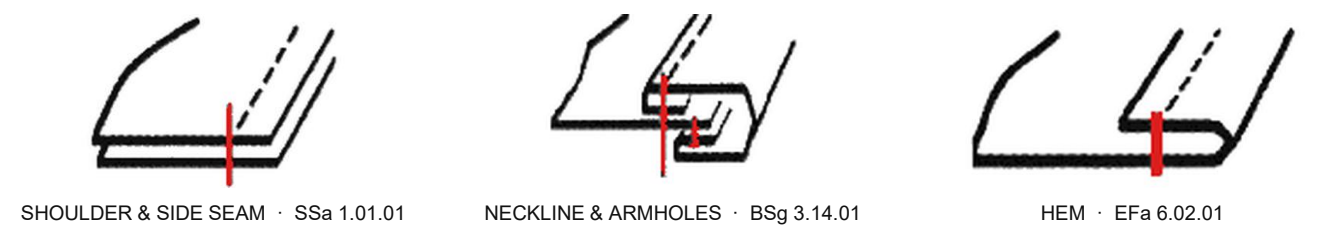
63.2	98.3	57.1	135.3
CHEST WIDTH, CM	HEM WIDTH, CM	CENTRE FRONT LENGTH, CM	FABRIC, G/M ²

DESIGN DETAILS



Seam map on the CLO garment views. Codes follow ISO 4916 seam classes and ISO 4915 stitch types. The two views are not to the same scale as each other; the panels are drawn to one shared scale on pages 4 and 5.

SEAM CROSS SECTIONS · NOT TO SCALE



Seam classes ISO 4916 and stitch types ISO 4915, reproduced from Koivunen, E. (n.d.) Cross Sections and Stitches, MA Innovative Fashion Production teaching materials, London College of Fashion.

CONSTRUCTION AT A GLANCE

- Shoulder · SSa 1.01.01, 301, 1 cm, 504 on both plies
- Side seam · as the shoulder, then 301 topstitch at 0.1 cm
- Neckline · BSg 3.14.01, two-step bias binding, finished 0.8 cm, 301 both passes
- Armhole · same binding as the neckline
- CB slit · 9 cm, bound by the neck strip, button and loop
- Hem · EFa 6.02.01, 504 edge, turned 2 cm, 301 at 1.5 cm

GATHERS

Between the notches the front neck edge runs 30.0 cm round the curve (27.4 cm straight), the back 24.0 cm; both are gathered onto the binding. Gather ratio and stitch method to be confirmed at proto review.

GRAIN

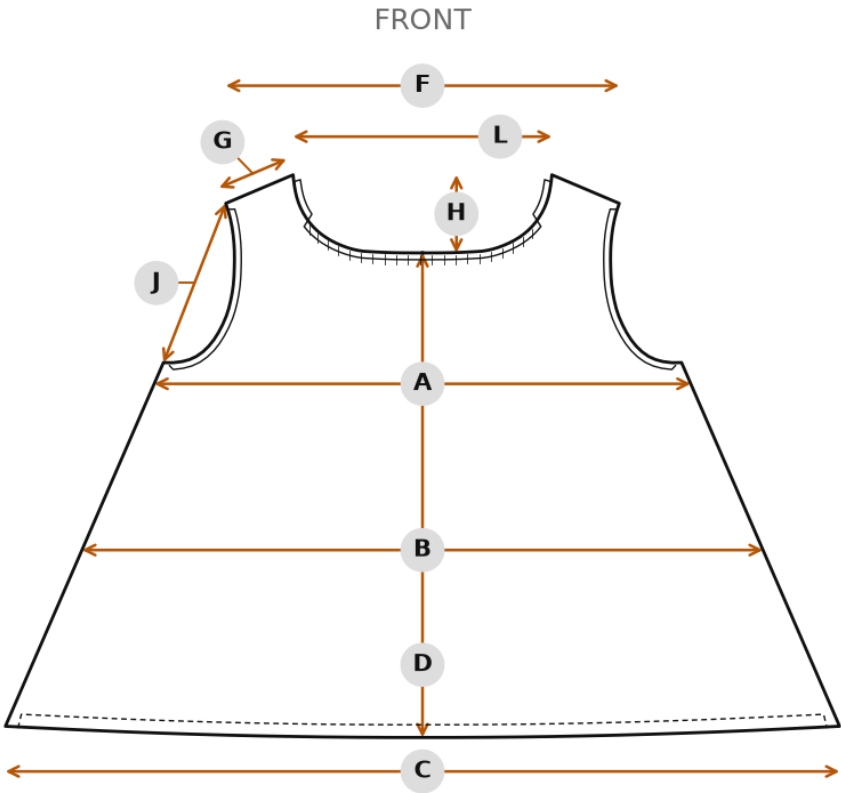
Both panels cut on the straight grain, centre line parallel to the selvedge. The selvedge was identified from the stenter pin holes on the roll.

SEAM ALLOWANCE, CM

EDGE	ALLOWANCE	WHY
Shoulder	1.0	sewn seam
Side seam	1.0	sewn seam
Neckline	0	bound
Armhole	0	bound
CB slit	0	bound
Hem	2.0	turned

The binding is exposed, so the neckline and armhole carry no allowance: the strip wraps the cut edge and the finished opening is that edge. The 0.8 cm on page 11 is a stitch position, not an offset.

POINT OF MEASURE · FRONT



SEAM CHECK · WALKED ON THE PATTERN, CM

SEAM	FRONT	BACK	DIFF	RESULT
Shoulder	8.6	8.6	0.0	match
Side seam	46.7	45.3	+1.4	front longer, see page 5
Armhole edge	23.5	24.3	—	bound, 47.8 per armhole

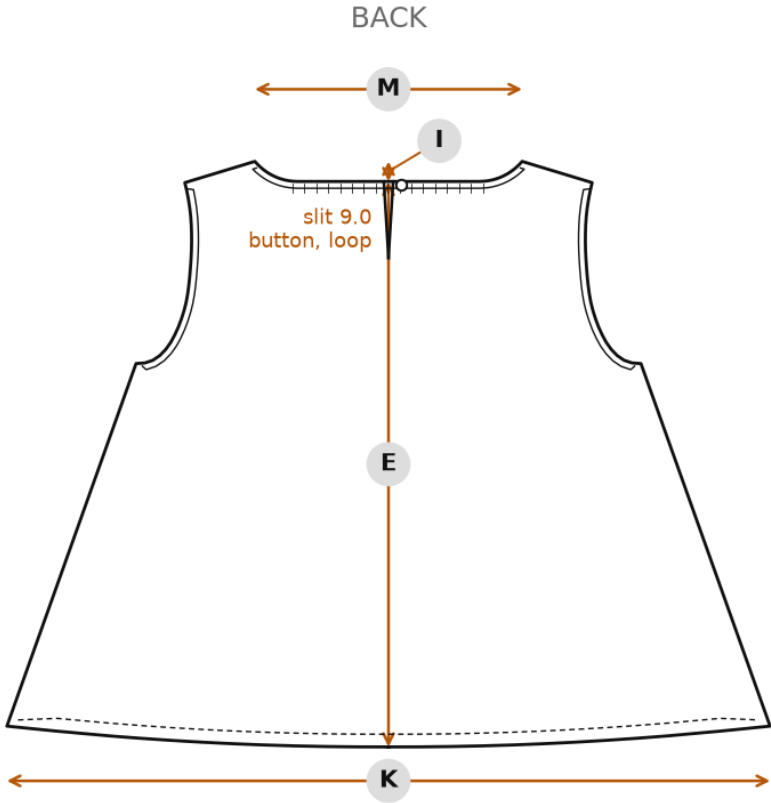
POM	POINT OF MEASURE	HOW TO MEASURE	SPEC	TOL ±	PROTO
A	Chest width	2.5 cm below underarm, edge to edge	63.2	1.0	
B	Width at mid-height	midway between underarm and hem, edge to edge	80.3	1.0	
C	Hem width	bottom edge, edge to edge	98.3	1.0	
D	Centre front length	centre front neck straight down to hem	57.1	1.0	
F	Across shoulder	shoulder point to shoulder point, across the neck opening	46.4	1.0	
G	Shoulder seam length	high point shoulder to shoulder point	8.6	1.0	
H	Front neck drop	HPS line to lowest front neck point	9.2	0.5	
J	Armhole chord	shoulder point to underarm, straight line, not the curve	20.1	1.0	
J1	Front armhole curve	shoulder point to underarm, along the curve	23.5	1.0	
L	Front neck width	HPS to HPS, straight	30.5	0.5	

Finished flat, full width, in centimetres. Read from the CLO pattern by pom_measure.py at the pattern's own corners; chest, hem and centre front length agree with an independent measurement in shape_measurements.json.

MEASURING CONDITIONS

Lay the garment flat without tension and measure edge to edge, full width. Leave the gathers as sewn when measuring the neck. Fill the Proto 1 column at the first fitting; a value outside tolerance is corrected on the pattern, not eased on the sample.

POINT OF MEASURE · BACK



BINDING AND GATHER LENGTHS, CM

EDGE	FRONT	BACK	TOTAL	USE
Armhole	23.5	24.3	47.8	one bias strip each side
Neck, HPS to HPS	40.7	32.9	73.6	bound after gathering
Gathered, notch to notch	30.0	24.0	54.0	1.60 : 1 in the model, confirm at proto
Centre-back slit	—	9.0 a side	18.0	bound flat by the neck strip

POM	POINT OF MEASURE	HOW TO MEASURE	SPEC	TOL ±	PROTO
E	Centre back length	centre back neck straight down to hem	66.6	1.0	
I	Back neck drop	HPS line to lowest back neck point	2.4	0.5	
J2	Back armhole curve	shoulder point to underarm, along the curve	24.3	1.0	
K	Back hem width	bottom edge of the back panel	89.9	1.0	
M	Back neck width	HPS to HPS, straight	31.5	0.5	

WHY THE BACK IS LONGER

Centre back 66.6 cm against centre front 57.1 cm. The back neck drops only 2.4 cm where the front drops 9.2 cm, so the back centre line runs further before it reaches the same hem.

WHY THE BACK HEM IS NARROWER

Back hem 89.9 cm against front hem 98.3 cm. Both panels flare from the underarm, the front by 18.6 cm a side and the back by 15.2 cm: G1's own proportions, doubled for V3. The larger front flare is what swings the silhouette forward.

WHY THE SIDE SEAMS DIFFER BY 1.4 CM

Front side seam 46.7 cm, back 45.3 cm. Both run from the underarm to the hem corner, but the front travels further outwards, so it is longer. Sewn edge to edge the hem would step at the side seam: at proto, ease it in or true the front hem corner.

WHERE FRONT AND BACK MEET

The shoulder seams are 8.6 cm on both panels and sew without ease. HPS to HPS the back neck is 31.5 cm and the front 30.5 cm.

INNOVATIVE FASHION
PRODUCTION

CHENHAO ZHOU · FU009065

COLLECTION
STYLE CODE
STYLE / PATTERN

MA IFP MASTERS PROJECT
G1-TOP-V3
SLEEVELESS A-LINE TOP

MANUFACTURER
STATUS
SAMPLE SIZE
MAIN FABRIC

LCF IN HOUSE / SELF
PROTO 1 · REV 1
M
PG1 · MEASURED

GRADING · PROPOSED, XS TO XL

GRADE RULES, CM



FRONT · XS to XL, M heavy



BACK · XS to XL, M heavy

Front and back graded point by point from the rules, XS to XL; size M heavy.

GRADE POINTS · PER SIZE STEP, CM

POINT	ACROSS	DOWN	CARRIES
High point shoulder	0.3	—	neck width 0.6
Shoulder point	0.5	—	across shoulder 1.0
Underarm	1.0	0.5	chest and waist 2.0
Hem corner	1.0	1.3	hem 2.0
Centre neck	—	0.3	neck drop 0.3
Centre hem	—	1.3	centre length 1.0

WHAT GRADING WILL NOT FIX

The front side seam is 1.4 cm longer than the back at M (page 5). Graded as it stands, the same difference carries into every size: resolve it on the M pattern first.

POM	POINT OF MEASURE	GRADE	XS	S	M	L	XL
A	Chest width	2.0	59.2	61.2	63.2	65.2	67.2
B	Width at mid-height	2.0	76.3	78.3	80.3	82.3	84.3
C	Hem width	2.0	94.3	96.3	98.3	100.3	102.3
D	Centre front length	1.0	55.1	56.1	57.1	58.1	59.1
E	Centre back length	1.0	64.6	65.6	66.6	67.6	68.6
F	Across shoulder	1.0	44.4	45.4	46.4	47.4	48.4
G	Shoulder seam length	0.2	8.2	8.4	8.6	8.8	9.0
H	Front neck drop	0.3	8.6	8.9	9.2	9.5	9.8
I	Back neck drop	0.3	1.8	2.1	2.4	2.7	3.0
J	Armhole chord	0.7	18.7	19.4	20.1	20.8	21.5
K	Back hem width	2.0	85.9	87.9	89.9	91.9	93.9
L	Front neck width	0.6	29.3	29.9	30.5	31.1	31.7
M	Back neck width	0.6	30.3	30.9	31.5	32.1	32.7

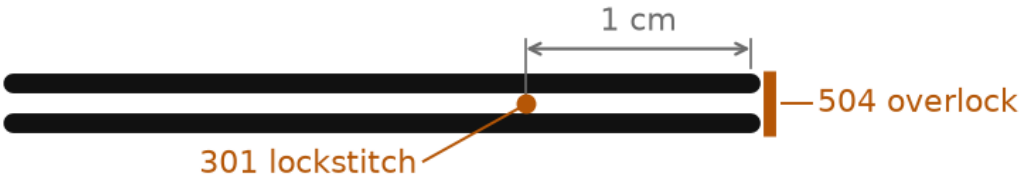
EU 34 / 36 / 38 / 40 / 42. Measured on the graded pattern, every point lands within 0.15 cm of this table.

STATUS

Proposed: only M is patterned, simulated and sewn, so confirm the rules before another size is cut. Widths grade 2.0 cm flat, 4.0 cm round the body, and both hems move 1.3 cm a size. The centre-back slit stays 9.0 cm in every size.

CONSTRUCTION · SHOULDER AND SIDE SEAM

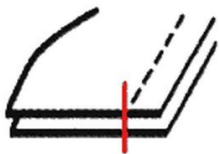
SSa · 1.01.01 · superimposed seam



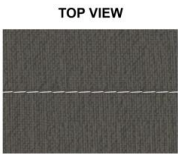
301 lockstitch, 1 cm allowance, both edges 504 overlocked together
side seam only: then topstitched 301, 0.1 cm from the seam on each side

— fabric ply ● stitch, in section | overlocked edge ↔ dimension | stitch line, ISO drawing

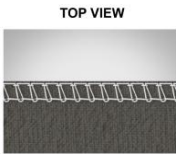
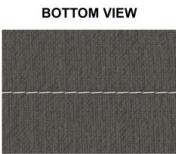
ISO REFERENCE · NOT TO SCALE



SSa 1.01.01 · superimposed seam



301 · lockstitch



504 · three-thread overedge



Seam classes ISO 4916 and stitch types ISO 4915, reproduced from Koivunen, E. (n.d.) Cross Sections and Stitches, MA Innovative Fashion Production teaching materials, London College of Fashion.

STITCH SPECIFICATION

STITCH	TYPE	DENSITY	THREAD	WHERE
301	lockstitch	12 per inch	T1, polyester core-spun 50s	1 cm from the edge
504	three-thread overedge	—	T2, polyester 60s	both plies together
301	topstitch, side seam only	12 per inch	T1, polyester core-spun 50s	0.1 cm each side of the seam

SEAM CLASS

SSa 1.01.01 — superimposed seam, two plies, one row of stitching.

STITCH

301 lockstitch, 12 stitches per inch, polyester core-spun 50s thread.

ALLOWANCE

1.0 cm, both plies overlocked together with a 504 three-thread overlock, pressed towards the back.

TOPSTITCH, SIDE SEAM ONLY

301, 0.1 cm from the seam on each side, sewn from the face after pressing. The shoulder is not topstitched.

ORDER OF MAKE

1. Gather the front and back neck edges to the marked notches.
2. Join shoulders, overlock, press.
3. Cut the 9 cm centre-back slit.
4. Bind slit and neckline with one strip; button and loop.
5. Bind the armholes.
6. Join the side seams, overlock, press, topstitch.
7. Overlock the hem edge, turn 2 cm and stitch.

CHECK AT PROTO

Seam flat along the 1 cm line, no puckering. The overlock catches both plies without cutting into the 301 line. Machines and threads are on pages 11 and 16.

SEAM LENGTHS

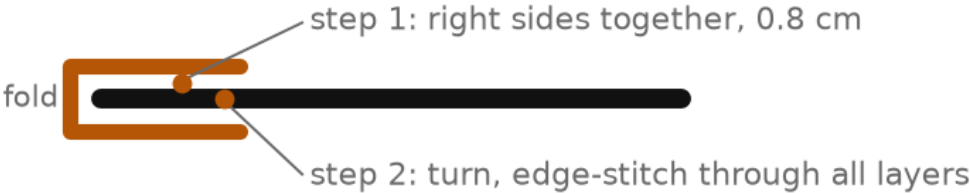
Shoulder 8.6 cm, front and back alike. Side seam 46.7 cm front, 45.3 cm back: match at the underarm; ease the difference in or true the pattern at proto (page 5).

THE CODES

SSa: superimposed seam, ISO 4916 class 1. 301: lockstitch. 504: three-thread overedge, ISO 4915.

CONSTRUCTION · NECKLINE BINDING

BSg · 3.14.01 · 2-step bias binding



binding cut on the true bias, 3.2 cm wide, finished 0.8 cm; 301 both passes

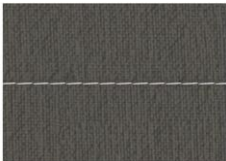
— fabric ply — bias binding strip ● stitch, in section | stitch line, ISO drawing

ISO REFERENCE · NOT TO SCALE

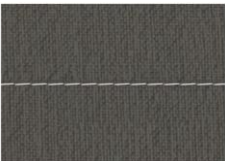


BSg 3.14.01 · binding, two operations

TOP VIEW



BOTTOM VIEW



301 · lockstitch

Seam classes ISO 4916 and stitch types ISO 4915, reproduced from Koivunen, E. (n.d.) Cross Sections and Stitches, MA Innovative Fashion Production teaching materials, London College of Fashion.

STITCH SPECIFICATION

STITCH	TYPE	DENSITY	THREAD	WHERE
301	lockstitch, pass 1	12 per inch	T1, polyester core-spun 50s	0.8 cm, right sides together
301	lockstitch, pass 2	12 per inch	T1, polyester core-spun 50s	0.1 cm from the fold

FINISH

BSg 3.14.01 — mock clean-finish binding sewn in two operations; self fabric, cut on the true 45° bias.

WHY BIAS, IN THIS CLOTH

PG1 measures 20.9 N/cm along the warp and 33.9 N/cm across the weft at 5% strain, but only 1.5 N/cm on the bias. A binding cut on the bias is an order of magnitude easier to ease round the neck curve than one cut on either straight grain.

SPECIFICATION

Strip cut 3.2 cm wide, finished 0.8 cm. First pass right sides together at 0.8 cm, second pass edge-stitched through all layers at 0.1 cm from the fold. 301 lockstitch both passes.

CENTRE-BACK SLIT

9.0 cm, cut straight down the centre back from the neck edge. One strip binds it with the neckline, 3.2 × 65.6 cm: flat down each edge of the slit, gathered onto round the neck, with no joint at the shoulders. One 20 mm button on the wearer's right, a thread loop on the left.

MACHINES

Single-needle lockstitch for both passes; the strip is turned by hand between them, with no binding folder. Button and loop by hand.

CHECK AT PROTO

Finished width 0.8 cm all round, no twist over the neck curve. Gathers only between the notches and even either side of the centre. Binding length against the gathered edge.

BINDING LENGTHS

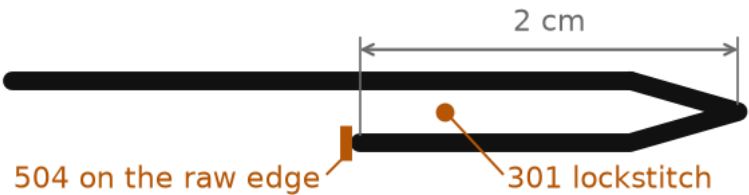
Armholes 47.8 cm each, the edge itself, as they are not gathered. Neck strip 65.6 cm: 46.0 round the gathered neck, 9.0 down each edge of the slit, 0.8 turned in at each end. The raw neck edge is 73.6 cm before gathering.

THE CODE

BSg 3.14.01: binding, ISO 4916 class 3, sewn in two operations. BSc 3.05.01 is the folder-fed one-pass version, which this is not.

CONSTRUCTION · HEM

EFa · 6.02.01 · single-fold hem



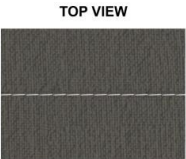
raw edge 504 overlocked, turned once 2 cm, 301 lockstitch 1.5 cm from the fold

— fabric ply ● stitch, in section █ overlocked edge ↔ dimension | stitch line, ISO drawing

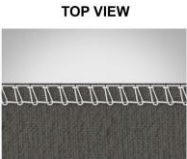
ISO REFERENCE · NOT TO SCALE



EFa 6.02.01 · single-fold hem



301 · lockstitch



504 · three-thread overedge



Seam classes ISO 4916 and stitch types ISO 4915, reproduced from Koivunen, E. (n.d.) Cross Sections and Stitches, MA Innovative Fashion Production teaching materials, London College of Fashion.

STITCH SPECIFICATION

STITCH	TYPE	DENSITY	THREAD	WHERE
504	three-thread overedge	—	T2, polyester 60s	raw edge, before turning
301	lockstitch	12 per inch	T1, polyester core-spun 50s	1.5 cm from the fold

FINISH

EFa 6.02.01 — single-fold hem: raw edge overlocked, turned once and stitched. Not EFb 6.03.01, which turns the raw edge under twice.

SPECIFICATION

504 overlock on the raw edge, turn 2.0 cm, 301 lockstitch 1.5 cm from the fold.

THE HEM IS CURVED

The hem rises towards the side seams, so the turn-up must be eased rather than folded flat. At 98.3 cm the hem is the widest line in the garment and the one the fabric's bending stiffness acts on most visibly.

TO CONFIRM AT PROTO

Whether 2.0 cm is too deep for the curve; a 1.2 cm turn may lie flatter.

MACHINES

Three-thread overlocker on the raw edge before turning, then single-needle lockstitch 1.5 cm from the fold.

CHECK AT PROTO

Turn depth even from centre front to the side seams. No roping where the curve is eased. The hem line must not step at the side seam (page 5).

HEM LENGTH

98.4 cm across the front and 90.1 cm across the back, along the curve: 188.5 cm of hem to overlock, turn and stitch.

THE CODE

EFa 6.02.01: edge finish, ISO 4916 class 6, single fold. EFb 6.03.01 folds the raw edge under twice, which this does not.

INNOVATIVE FASHION
PRODUCTION

CHENHAO ZHOU · FU009065

COLLECTION
STYLE CODE
STYLE / PATTERN

MA IFP MASTERS PROJECT
G1-TOP-V3
SLEEVELESS A-LINE TOP

MANUFACTURER
STATUS
SAMPLE SIZE
MAIN FABRIC

LCF IN HOUSE / SELF
PROTO 1 · REV 1
M
PG1 · MEASURED

CONSTRUCTION · STITCHED PROTOTYPE



FRONT



BACK



LEFT



THREE-QUARTER RIGHT



RIGHT

WHAT EACH VIEW IS CARRIED FOR

VIEW	WHAT IT CARRIES	STITCH VISIBLE
Front	silhouette and hem line at rest	301 hem topstitch, 1.5 cm
Back	the same, with the slit at centre back	301 hem, slit binding
Three-quarter	how the flare reads off-axis	301 hem, binding edgestitch
Left / right	side seam hanging straight, no roping	301 topstitch, 0.1 cm

RENDER CONDITIONS

THE FILE

G1_techpack_stitched.zprj, a copy of the camera-locked test file. The stitching was added to the copy only, so the measurement chain in pages 4 to 6 is untouched.

WHY THESE ARE RENDERS, NOT SCREENSHOTS

Stitching is invisible in CLO's real-time 3D view. It appears only in Render mode, so every plate on pages 10 to 13 is a render rather than a viewport grab. This is normal behaviour, not a setting error.

SOLVER

Particle distance 10 mm, unchanged. The hard creases seen in the first pass cleared on re-simulation at the same distance; the mesh was not made finer.

THE RIDGE ABOVE THE HEM

A second line runs parallel to and above the hem topstitch. It is the thickness of the turned-up facing showing through, not a stitch. It is a real result of the construction and is left in. See page 12.

WHAT THESE PLATES DO NOT SHOW

Print and surface texture. The cloth is rendered in PG1's colour so the plates match the toile. PG1's measured properties are page 15.

COUNT

Fourteen renders from this file: four orthogonal views, one three-quarter, four details and five exploded plates. All fourteen are used across pages 10 to 13.

REVISION SHOWN

Re-rendered on 11 October 2026 in CLO 2026.1.310, after the toile was sewn. Rev 1 adds the centre-back slit, its button and loop, and the side-seam topstitch, here and on every sheet they touch. The plates are a simulated result, not a photograph of the toile.

INNOVATIVE FASHION
PRODUCTION

CHENHAO ZHOU · FU009065

COLLECTION
STYLE CODE
STYLE / PATTERN

MA IFP MASTERS PROJECT
G1-TOP-V3
SLEEVELESS A-LINE TOP

MANUFACTURER
STATUS
SAMPLE SIZE
MAIN FABRIC

LCF IN HOUSE / SELF
PROTO 1 · REV 1
M
PG1 · MEASURED

SEAM AND STITCH MAP

#	POSITION	CLASS	ISO 4916	WHAT THAT MEANS	STITCH · ISO 4915	OFFSET	THREAD	ALLOWANCE	ON THE FACE
1	Shoulder	SSa	1.01.01	Two plies superimposed, stitched once	301 lockstitch	1.00 cm	T1	1.0 cm	no
2	Shoulder, raw edges	—	—	Both allowances neaten together	504 three-thread overedge	0.00 cm	T2	both plies	no
3	Side seam	SSa	1.01.01	Two plies superimposed, stitched once	301 lockstitch	1.00 cm	T1	1.0 cm	no
4	Side seam, raw edges	—	—	Both allowances neaten together	504 three-thread overedge	0.00 cm	T2	both plies	no
5	Side seam, topstitch	—	—	One row each side of the seam line	301 lockstitch	0.10 cm	T1	—	yes
6	Neckline binding, pass 1	BSg	3.14.01	Bias strip stitched to the edge	301 lockstitch	0.80 cm	T1	strip 0.8 cm	no
7	Neckline binding, pass 2	BSg	3.14.01	Strip turned over and edgestitched	301 edgestitch	0.10 cm	T1	through all plies	yes
8	Armhole binding, both passes	BSg	3.14.01	As the neckline, one strip each side	301 lockstitch	0.80 / 0.10 cm	T1	as neckline	yes
9	Centre-back slit binding	BSg	3.14.01	The neck strip run on, not gathered	301 lockstitch	0.80 / 0.10 cm	T1	as neckline	yes
10	Hem facing, raw edge	—	—	Single ply neaten before turning	504 three-thread overedge	0.00 cm	T2	single ply	no
11	Hem	EFa	6.02.01	Edge turned once and topstitched	301 lockstitch	1.50 cm	T1	turn 2.0 cm	yes

Stitch density is 12 per inch on every row, so it is stated once here rather than repeated down a column. Class letters follow ISO 4916 and stitch types ISO 4915; a dash means the operation neatens or topstitches and has no seam class of its own. The button and its thread loop are sewn by hand and are listed on page 16.

AS BUILT IN THE DIGITAL MODEL

OBJECT	OFFSET	PARAMETERS
Hem topstitch	1.50 cm	SPI 12, 0.21 cm pitch
Binding edgestitch	0.10 cm	SPI 12
Seam topstitch	1.00 cm	SPI 12, lowest priority
Side seam topstitch	0.10 cm	SPI 12, each side
ISO 504 overedge	0.00 cm	width 0.27 cm, 2 rows
Centre-back slit	9.0 cm	5 mm button, buttonhole

WHAT THESE SIX ARE

The objects carried in the CLO file. Offsets are measured from the edge each is applied to. The model's 5 mm button and buttonhole stand in for the 20 mm button and thread loop.

THREAD WEIGHT IS NOT SPECIFIED HERE

Tex 40 throughout, the engine default: a rendering weight with no meaning for production. T1 and T2 in the map above are the real threads, page 16.

FACE ORIENTATION · THE HEM RUNS OPPOSITE

RAW EDGE	FACE	WHY
Hem facing	FRONT	the facing turns up, so the ply reverses
Shoulder and side	BACK	allowance not turned, orientation kept

WHY THIS IS ON THE SPEC SHEET

A written spec says 504 overlock and stops there. It does not say which side of the ply the stitch sits on once the facing is turned, because on a physical garment the maker can see it. In the digital model it is a parameter that has to be chosen, and choosing it wrong puts the overlock on the outside of the finished hem.

IT IS RECORDED SO THE MODEL REBUILDS

Anyone opening the file and re-applying the edge finish needs these two rows to reach the same garment. Nothing else in this pack carries them.

MACHINES AND OPERATIONS

OPERATION	MACHINE	THREAD
Gather neck edges to notch	long-stitch lockstitch	T1
Join shoulders	single needle lockstitch	T1
Neaten shoulder allowance	three-thread overlocker	T2
Cut the centre-back slit	by hand	—
Bind slit and neck, 2 passes	single needle lockstitch	T1
Button and thread loop	by hand	T1
Bind armholes, 2 passes	single needle lockstitch	T1
Join side seams	single needle lockstitch	T1
Neaten side allowance	three-thread overlocker	T2
Topstitch side seams, 0.1 cm	single needle lockstitch	T1
Neaten hem facing edge	three-thread overlocker	T2
Turn 2.0 cm and topstitch	single needle lockstitch	T1

Two machines and a hand needle make the whole garment. Order of make is page 7.

INNOVATIVE FASHION PRODUCTION

CHENHAO ZHOU · FU009065

COLLECTION
STYLE CODE
STYLE / PATTERN

MA IFP MASTERS PROJECT
G1-TOP-V3
SLEEVELESS A-LINE TOP

MANUFACTURER
STATUS
SAMPLE SIZE
MAIN FABRIC

LCF IN HOUSE / SELF
PROTO 1 · REV 1
M
PG1 · MEASURED

CONSTRUCTION · DETAIL RENDERS

READING THE DETAILS



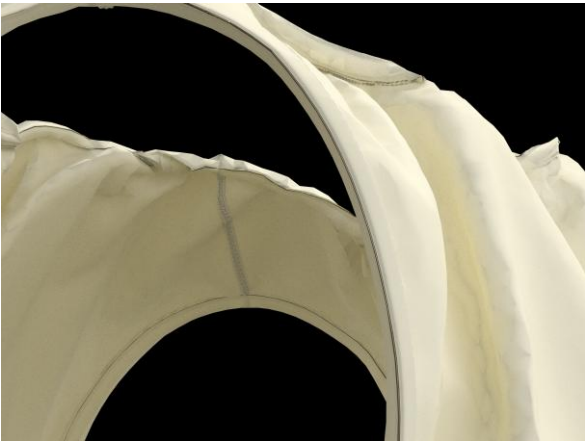
CENTRE-BACK SLIT



ARMHOLE BINDING



HEM AND SIDE SEAM



INSIDE, SIDE SEAM OVERLOCK

All four from G1_techpack_stitched.zprj in Render mode, cropped to the detail. Cloth rendered in PG1's colour; PG1's measured properties are page 15.

CENTRE-BACK SLIT

A 9 cm slit at centre back, so the neckline passes the head. The neck strip runs on down both edges, flat, and a 20 mm button and a thread loop close it at the neck. The render shows the model's stand-in, a 5 mm button and a buttonhole.

ARMHOLE

Same binding as the neckline, same two operations, cut on the true bias. Confirm at proto that the strip is not stretched round the front curve.

THE LINES AT THE HEM AND SIDE SEAM

Lower line: the 301 hem topstitch, 1.5 cm from the fold. Upper line: the edge of the turned-up facing pressing through the cloth. Only the lower one is stitching. The side seam is topstitched 0.1 cm from the seam on both sides, 301: row 5 of the seam map, page 11.

WHAT THE DETAILS ARE FOR

They are the check that the specification on pages 7 to 9 was actually built: offsets, which edge each stitch sits on, and whether any line breaks at a seam crossing.

INSIDE, AT THE SIDE SEAM

Seen through the armhole: the 504 overedge runs down the side seam allowance and stops under the armhole binding. This is the plate in which the overlock is visible, and it sits on the inside.

WHY NO CALLOUT ARROWS

The measured drawings on pages 7 to 9 carry the dimensions. These plates are here to be compared against those drawings, so they are left unmarked; anything drawn on top of them would be an assertion rather than the render's own evidence.

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SAMPLE SIZE
MAIN FABRIC

LCF IN HOUSE / SELF
PROTO 1 · REV 1
M
PG1 · MEASURED

CONSTRUCTION · EXPLODED

WHY EXPLODED PLATES



PANELS SEPARATED, BACK NEAREST



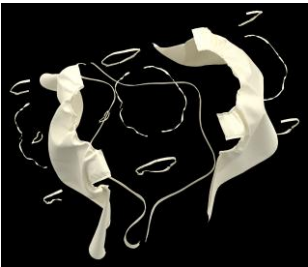
FRONT PANEL NEAREST



FRONT, OTHER SIDE



SIDE ELEVATION



PLAN, FROM ABOVE

WHAT EACH PLATE SETTLES

PLATE	WHAT IT SHOWS	WHY IT IS NEEDED
Back nearest	the back with its slit open and strips lifted	slit edges bound, one button at the neck
Front nearest	front face out, inside of the back behind it	both panels with their strips, no body
Front, other side	the same two panels from the other quarter	each armhole binding is one closed strip
Side elevation	front and back in profile, hem strips between	how far each panel flares from the vertical
Plan, from above	neck and armhole edges with their strips	strip length against the edge it binds

THE PROBLEM THESE SOLVE

In the finished renders the 504 overlock reads as a chain lying near the raw edge, not as loops wrapping round it. That is how CLO draws stitching, as geometry sitting on the surface, and it will not wrap an edge. The setting is correct: the edge selected is the facing's long edge, offset 0.00, and the view is the inside.

SO THE PLATES DIVIDE THE JOB

The detail render on page 12 proves the overlock exists and sits on the inside. The exploded plates show which strip belongs to which edge. The loop geometry itself is carried by the ISO 504 cross-section on page 7. Three sources, one specification.

HOW THEY WERE MADE

The panels were separated in the 3D window of the same file; no pattern was moved in 2D and nothing was re-sewn. The stitching travels with the panels, which is what makes these plates evidence rather than illustration.

READING THE STRIP LENGTHS

The binding strips read shorter than the edges they bind. That is correct: the neckline is gathered to the strip, not the strip to the neckline. The ratio is on page 5.

FOR THE MAKER

Order of make is on page 7, machines and operations on page 11. These plates are the reference for what the inside should look like at each of those steps.

WHAT AN EXPLODED PLATE CANNOT SETTLE

Tension, ease and how the binding behaves round the front armhole curve. Those are proto questions; the armhole one is on page 12.

DIGITAL TWIN · SIMULATION



V3 on the default avatar, in P15.

HEM SPREAD ACROSS 7 FABRICS

SHAPE	SPREAD, MM	RESULT
V1 straight	11.3	
V2 A-line	57.4	
V3 exaggerated	82.8	selected
Repeat noise	≤ 3.4	

Spread = range of hem width + range of lowest point across the seven fabrics; for V3, 70 + 13 mm.



Three shapes, rows, against seven measured fabrics, columns. Labels are the image's own.

WHAT THE GRID SHOWS

Along a row the shape is fixed and only the cloth changes. The straight top barely responds: its hem width varies 2.6 mm across all seven fabrics. The exaggerated A-line moves most, which is why it was chosen.

WHY V3 WAS SELECTED

Twenty-seven simulations: three shapes against seven measured fabrics, plus two repeat runs of one fabric in each shape. V3 is the shape in which the fabric shows itself most, which is the whole point of making this garment in a measured cloth.

V3 IN EACH FABRIC, MM

	P06	P15	P24	P27	P28	P31	P32
hem width	492	441	432	476	502	491	489
lowest point	916	909	914	910	903	909	910

THE PATTERN IS THE SAME FILE

The panels simulated here are the panels in this pack. Nothing was redrawn between the simulation and the document.

SOLVER SETTINGS

CLO 2026.1.224, particle distance 5 mm, Fitting (Accurate Fabric), gravity 9.8 m/s².

WHICH CLOTH IS IN THE RENDER

P15, a measured cotton knit: the fabric file G1_top_V3.zprj carries, here and in all 27 runs. PG1's own file, PG1_measured.zfab, was built on 10 October 2026.

REPEATABILITY

P06 was run three times in each shape. Repeats stayed within 3.4 mm, well under V3's 82.8 mm spread.

SINCE REV 0

PG1's bending was measured and calibrated on 10 October 2026: index 49 warp, 39 weft. Stretch is assigned by rank and shear is the engine default. Page 15.

HOW THE NUMBERS ARE READ

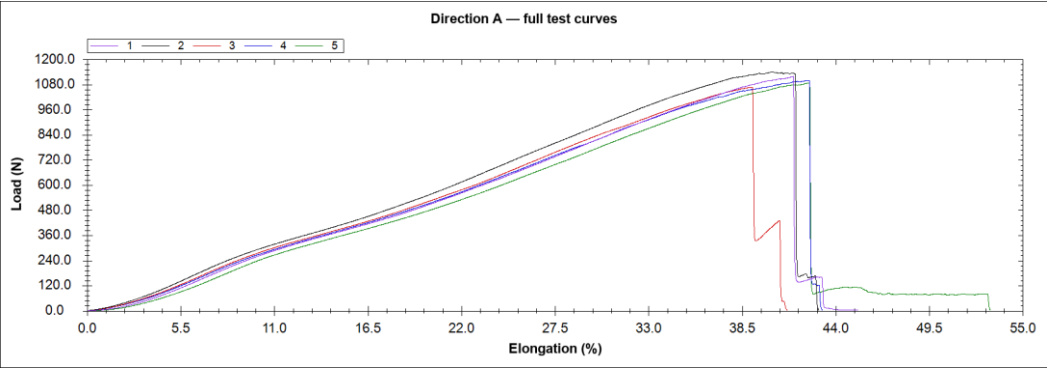
Hem width is the front-view width of the hem; lowest point is the lowest hem vertex. Both are read from each run's exported mesh, not from the picture.

FILES

G1_top_V3.zprj · S4_runs/s4_progress.json · 27 OBJ exports, one per run.

MAIN FABRIC · MEASURED, NOT STATED

PROPERTY	VALUE	METHOD / SOURCE
Composition	100% polyester (supplier)	supplier product page — not independently verified
Mass per unit area	135.3 g/m ²	5 readings: 135.2 / 134.5 / 134.5 / 134.9 / 137.4
Thickness	0.22 mm	at 1 kPa, 5 readings, all identical
Breaking force, warp	1102.5 N	GB/T 3923.1, 50 mm strip, 5 specimens, CV 2.5%
Breaking force, weft	596.7 N	same, CV 12.7% — one specimen low at 470 N
Breaking force, bias	569.8 N	same, CV 13.3%
Elongation at break	40.0 / 20.2 / 43.5 %	warp / weft / bias
Low-load stiffness at 5%	20.9 / 33.9 / 1.5 N/cm	warp / weft / bias, read off the test curves
Bending length	1.53 / 1.20 cm	warp / weft, cantilever at 41.5°, 3 strips each way, self-built rig, 10 October 2026; CLO index 49 / 39
Shear	constrained by the bias test	45° strip measures shear and stretch together



Warp (lab direction A), five specimens, GB/T 3923.1. The lab's chart, labels translated from Chinese. The low-load values in the table were read off these curves; the lab's report states only the break point.

READING THE CURVE

Drape lives in the first few per cent of stretch: at 5 %, a 5 cm warp strip carries about 104 N, the small rise at the far left of the chart. The break at 1102 N is far beyond anything a garment sees, which is why the low-load figure is the one the simulation needs.

WHY THIS PAGE IS NOT FULL OF TBC

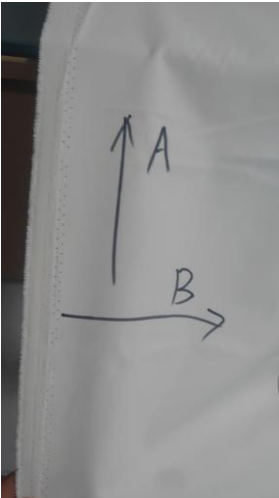
A tech pack normally states the fabric a supplier claims. This one states what the cloth measured. The roll was tested before the garment was cut, and the test specimens, the bending strips and the garment all come from the same bolt.

THE NUMBER THAT MATTERS IS NOT THE STRONG ONE

The warp is nearly twice as strong as the weft at break, yet at 5% strain it is the softer of the two, 20.9 against 33.9 N/cm. Drape follows the low-load figure, which a breaking test does not report. Two colours of this cloth tested in July, sold as one roll dyed twice, differed by 6% in breaking force and 3.6 times in low-load warp stiffness.

WHICH DIRECTION IS WARP

The lab labelled its directions A and B, not warp and weft. A is read as warp because it runs with the stenter pin holes along the selvage (photo, right).



Selvage pin holes, left; A runs with them.

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MAIN FABRIC

LCF IN HOUSE / SELF
PROTO 1 · REV 1
M
PG1 · MEASURED

BILL OF MATERIALS · LABELLING

CODE	COMPONENT	SPECIFICATION	PLACEMENT	QTY
F1	Main fabric	PG1, 100% polyester three-proof twill, 135.3 g/m²	body, binding	1.25 m
T1	Sewing thread	polyester core-spun 50s, colour to match	all seams, button, thread loop	1 cone
T2	Overlock thread	polyester 60s	seam edges	3 cones
B1	Button	four-hole, 20 mm, closed by a hand-worked thread loop in T1	centre back neck, wearer's right; loop on the left	1
L1	Main label	TBC	back neck binding, clear of the slit	1
L2	Care label	TBC	left side seam, 12 cm above hem	1

CARE

To be confirmed. The composition on the roll is the supplier's statement; no fibre identification was run, so no care instruction is stated here. A DSC melting point would settle it and has not been done for this cloth.

WHAT IS DELIBERATELY BLANK

Labels, care and country of origin are left TBC rather than filled with plausible text. Where this pack states a number it was measured; where it does not, it says so.

FABRIC CONSUMPTION

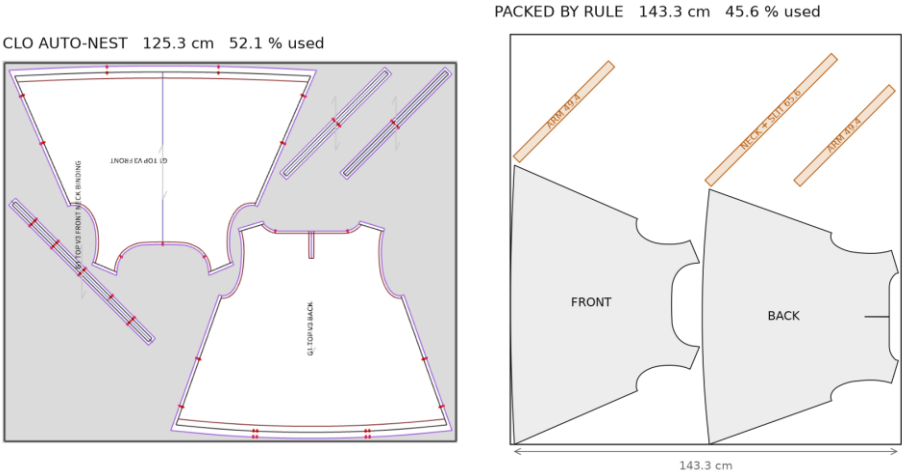
1.25 m at 150 cm width, off CLO's own marker on the next page, with the front turned head to tail. PG1 can be cut both ways. Both panels are on the straight grain, the three bias strips in the remnant beside them. PG1's width is still to confirm.

CUTTING LIST

PIECE	QTY	GRAIN	SIZE / LENGTH, CM	NOTES
Front	1	straight, centre line on the grain	whole piece · hem 98.3	9 notches
Back	1	straight, centre line on the grain	whole piece · hem 89.9	10 notches
Armhole binding	2	true bias, 45°	3.2 wide × 49.4 (edge 47.8 + 0.8 an end)	self fabric, from the remnant
Neck and slit binding	1	true bias, 45°	3.2 wide × 65.6 (neck 46.0 + slit 2 × 9.0 + 0.8 an end)	one strip, no joint at the shoulders; Rev 1

Binding lengths are the cut rectangles in the exported pattern, layer 1 of G1_top_V3_slit_2026-10-11.dxf. The neck strip is cut to the gathered neck plus the two edges of the slit, not to the raw neck edge. Hem sizes are the flat POM widths. Both panels are whole pieces, cut 1; the slit is drawn on the back panel. Notches are counted once each: the centre-back neck notch of Rev 0 is now the slit.

CUTTING LAYOUT · 1:1 PATTERN



The same five cut outlines nested twice at an assumed 150 cm usable width. Left: CLO's auto-nest of 11 October, with 1 cm of space left on every side. Right: the identical outlines read out of layer 1 of G1_top_V3_slit_2026-10-11.dxf and packed by marker_layout.py to a rule fixed in advance, both panels the same way up, checked to lie inside the cloth with no two pieces overlapping.

WHAT THE TWO NESTINGS COST

	CLO AUTO-NEST	PACKED BY RULE	DIFFERENCE
Length	125.3 cm	143.3 cm	+18.0 cm
Cloth used	52.1 %	45.6 %	-6.5 points
Pieces	5	5	the same outlines

WHY BOTH ARE HERE

A consumption figure is what cloth is ordered against. Both of these were laid out by machine, and on the same five outlines they differ by 18.0 cm, 12.6 % of the longer. The whole difference is one decision: CLO turns the front head to tail, the rule keeps both panels one way up. PG1 can be cut both ways, so the pack orders and plots CLO's layout. A cloth with a nap or a one-way finish would need the longer one.

LAYOUT

Usable width	150 cm, assumed
Length	125.3 cm
Cloth used	52.1 %
Panels	2, straight grain
Bias strips	3, at 45°
Armhole strip	3.2 × 49.4 cm
Neck strip	3.2 × 65.6 cm

WHY ONLY HALF

Both panels are wide A-lines, so the triangles between them and the selvedge are left over; the bias strips use part of that. CLO turns the front head to tail, which is where its 18 cm comes from.

IF THE CLOTH IS NARROWER

The front is 102.1 cm across with its allowances. Below that usable width it no longer fits across the cloth, and the layout has to be planned again.



A0 sheet 1 of 2, shown reduced: the front, at full size.

ALLOWANCES ON THE SHEETS

As exported, per edge (page 3): shoulder and side seam 1.0 cm, hem 2.0 cm, neckline and armhole none because they are bound. The sheets no longer add a uniform allowance, so nothing is trimmed back before cutting.

THE SLIT IS ON THE BACK SHEET

Both sheets were plotted again from the Rev 1 DXF. The back carries the 9.0 cm slit and the lines of its binding. The three strips are rectangles and are cut from the list on page 16.

PRINT CHECK

The 10 × 10 cm square on sheet 1 must measure 10.0 cm before anything is cut. Print at 100 %, never fit to page.

FILES

G1_top_V3_toile_A0.pdf — 2 sheets
G1_top_V3_toile_A4_tiled.pdf — 34 sheets
G1_top_V3_slit_2026-10-11.dxf / .plt

CLOTH

3 m of calico is supplied for the toile; the plotted layout needs 1.25 m at 150 cm. Confirm the calico's width before cutting.