

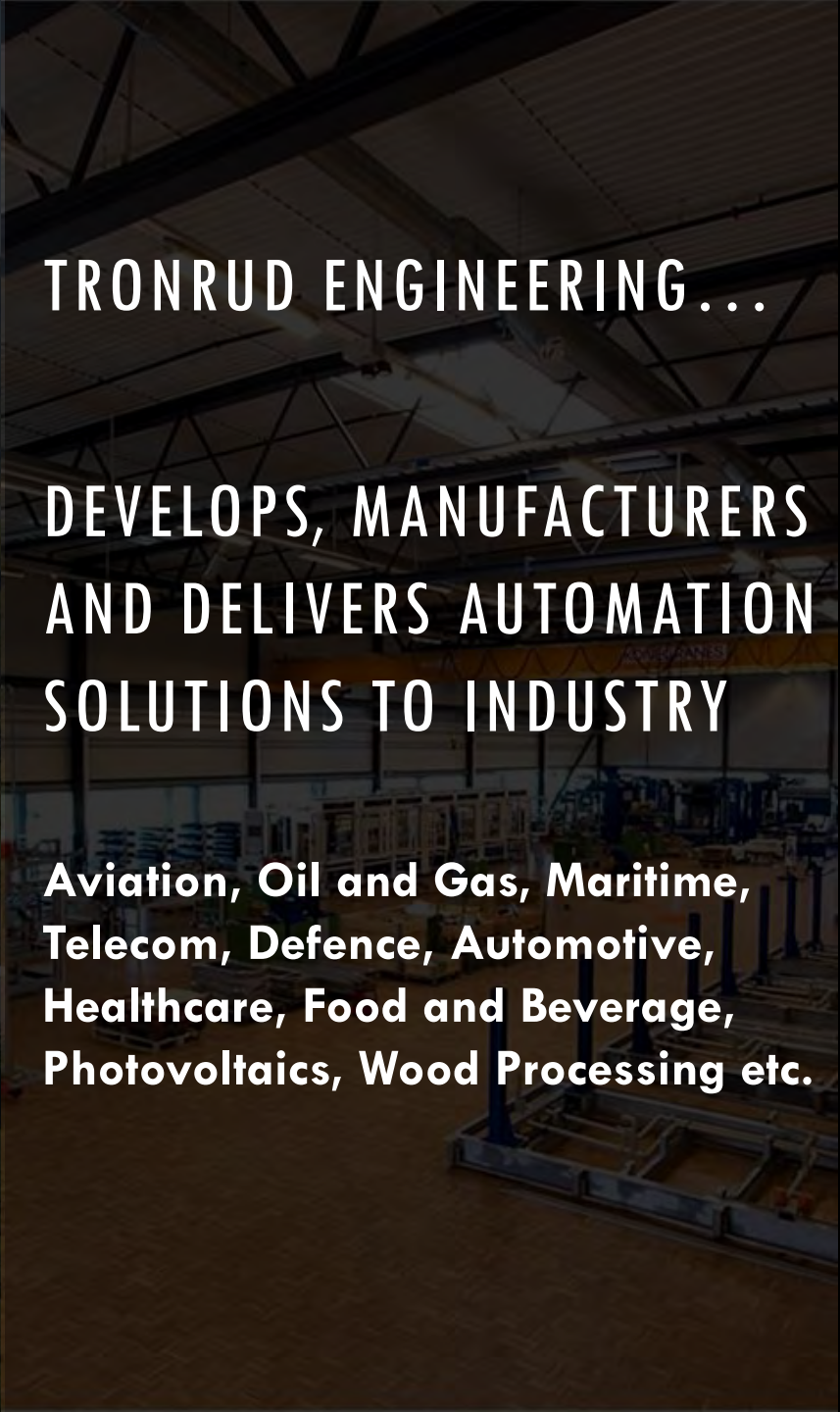
TC2: A PROTOTYPING TOOL FOR FABRICS

By Tronrud Engineering
Dept: Digital Weaving Norway





FROM NORWAY GOING INTERNATIONAL



TRONRUD ENGINEERING...

DEVELOPS, MANUFACTURES
AND DELIVERS AUTOMATION
SOLUTIONS TO INDUSTRY

Aviation, Oil and Gas, Maritime,
Telecom, Defence, Automotive,
Healthcare, Food and Beverage,
Photovoltaics, Wood Processing etc.



**TRONRUD ENGINEERING
DEVELOPED TC2 IN 1995**

WHAT IS A TC2?



A DIGITAL JACQUARD WEAVING LOOM

A DESIGN TOOL FOR THE CREATIVE PHASE OF MAKING TEXTILES...

SAMPLING

PRODUCT DEVELOPMENT

PROTOTYPING

MASS CUSTOMIZATION

CREATING ONE-OFFS/ BESPOKES

WHO IS THE TC2 FOR?

FABLABS/MAKERS SPACES/ RESEARCH CENTRES
TO TEST MATERIALS AND THEIR PROPERTIES

EDUCATIONAL INSTITUTIONS
TO EXPLORE FABRICS, ART, DESIGN, FASHION
TEXTILE TECHNOLOGY/ ENGINEERING

TEXTILE ARTISTS AND CRAFT-WEAVERS
TO CREATE FIBER ART, CUSTOMIZED FABRICS

TEXTILE MANUFACTURERS
TO PROTOTYPE SMART TEXTILES, APPAREL,
FOOTWEAR, INTERIORS

FAB LAB, MAKERS SPACES, RESEARCH CENTERS



NAVIGATE
COLLIDE. CONNECT. CREATE.

UNSTABLE
DESIGN LAB

v — a — c

THE
FABRICK
LAB.



Advanced Functional Fabrics of America

EDUCATIONAL INSTITUTIONS

Exploring textiles across academic disciplines...

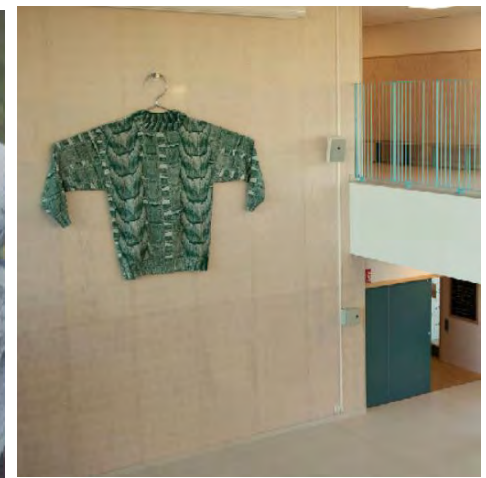
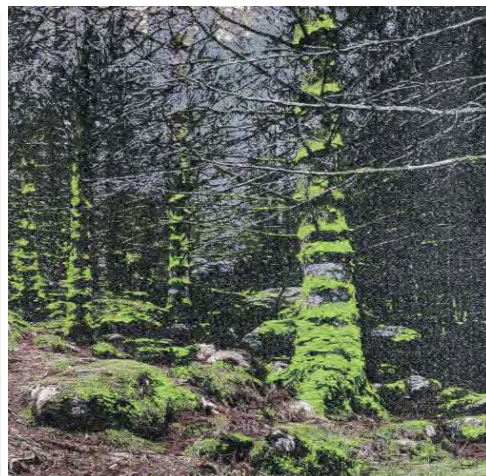
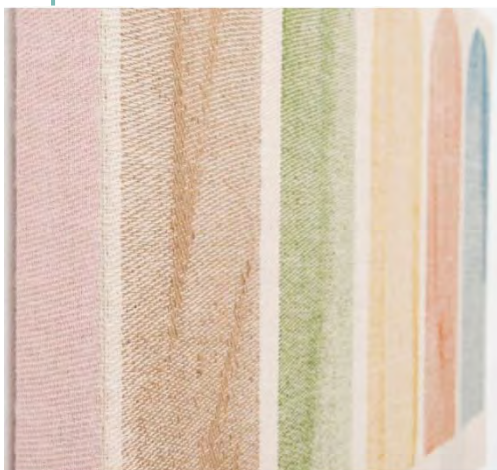
ART Textile Art/Design, Fashion, Fabrics

+

SCIENCE Textile Technology/ Engineering



TEXTILE ARTISTS AND CRAFT WEAVERS



TEXTILE MANUFACTURERS

DASH+MILLER

Global leaders in the design and development of woven fabrics

[HOME](#)[WHAT WE DO](#)[WHO WE ARE](#)[CONTACT](#)[Consult + Connect](#)[Fabric + Weave](#)[Design + Innovation](#)

"Creativity + craft
meets

industry + technology"

We offer a bespoke design service for woven fabric trends, future materials development, one-off design solutions, and comprehensive fabric collections.

The service we offer is geared towards providing individual and relevant design solutions in an adaptive and responsive way. Our clients come to us from some of the most cutting-edge and creative design teams in the world and our singular and informed approach to each project reflects this. We understand how to dissect, translate and develop the fundamental identity of each brand, manufacturer and artisan that we collaborate with which always results in a beautiful, meaningful and unique outcome.



HOW DOES THE TC2 WORK?

CREATE A DESIGN ON THE
COMPUTER

EDIT IT IN A DESIGN PROGRAM

OPEN EDITED IMAGE IN LOOM
CONTROLLER

CONNECT TC2 SOFTWARE TO THE
LOOM

START WEAVING!

Every PIXEL is tagged to a THREAD,
giving independent control of upto
10 560 threads!



WHY IS THE TC2 “DIFFERENT”?

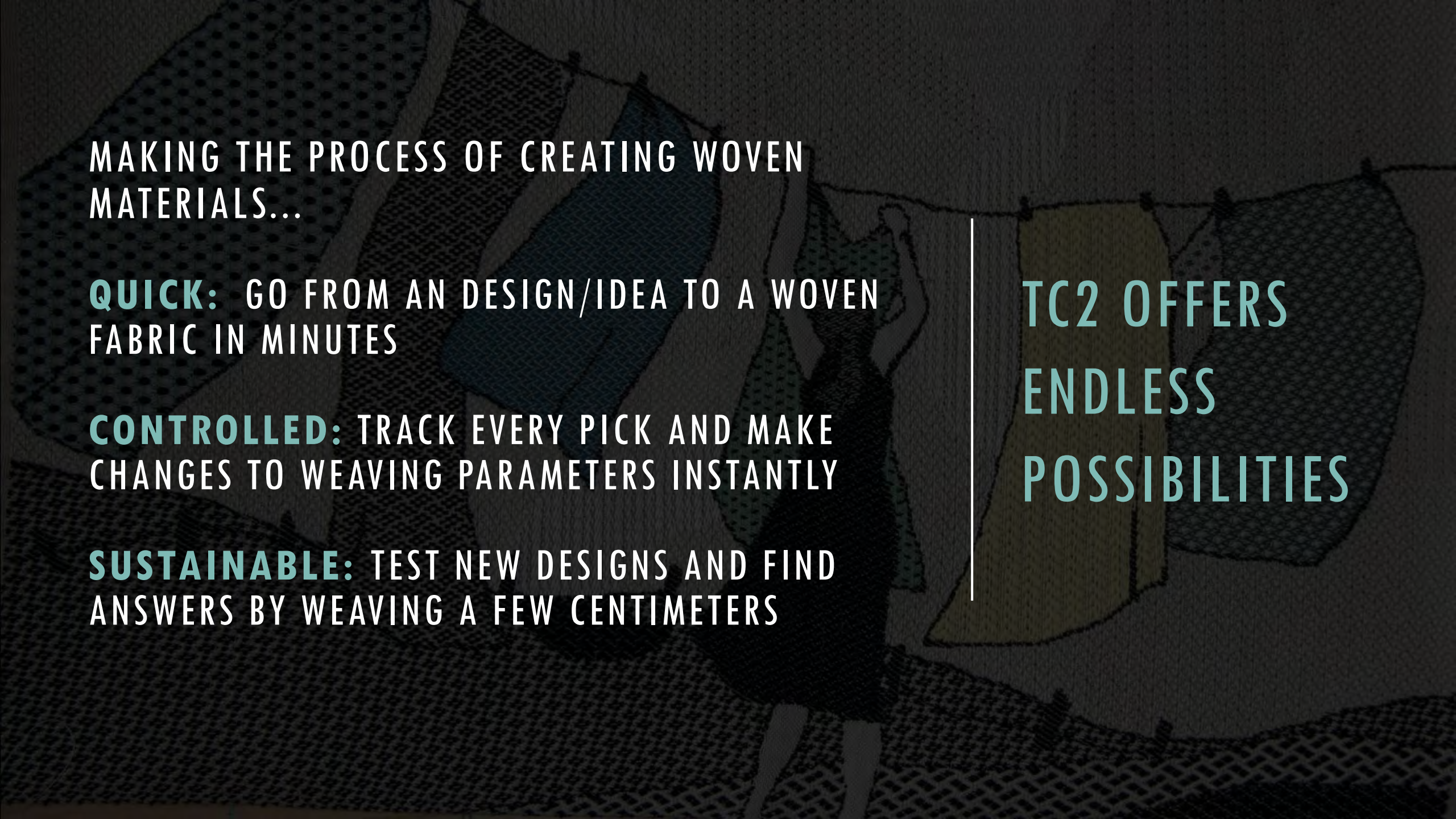
WITH A HAND-OPERATED JACQUARD LOOM,
DIFFERENT DESIGNS (DOBBY & JACQUARD)
MAY BE TRIED OUT ONE AFTER THE OTHER

INDIVIDUAL CONTROL OVER EVERY WARP THREAD...
NO DESIGN LIMITATIONS

LOOM OPERATIONS ARE COMPUTER-CONTROLLED...
**MODIFICATIONS TO DESIGNS, WEAVE
STRUCTURES, WARP DENSITIES, WEFT
MATERIALS CAN BE MADE INSTANTLY!**

TC2 BRINGS DESIGN PROCESS INTO THE
STUDIO SETTING





MAKING THE PROCESS OF CREATING WOVEN
MATERIALS...

QUICK: GO FROM AN DESIGN/IDEA TO A WOVEN
FABRIC IN MINUTES

CONTROLLED: TRACK EVERY PICK AND MAKE
CHANGES TO WEAVING PARAMETERS INSTANTLY

SUSTAINABLE: TEST NEW DESIGNS AND FIND
ANSWERS BY WEAVING A FEW CENTIMETERS

TC2 OFFERS
ENDLESS
POSSIBILITIES

ENGAGING ARTISTS AND RESEARCHERS ACROSS SEGMENTS



INTERLACE EXHIBIT by Helle Jongerius
Lafayette Anticipations (Paris)
Exposing the public to the textile production process to create awareness, re-valuation and appreciation for textiles.



GAME OF THRONES Tapestry
Ulster Museum, Belfast (N Ireland)
The 80-m long tapestry immortalizes scenes from the eight seasons of the Series and is woven on the TC2 .



WEAVING FUTURES Exhibit
London Transport Museum
As a part of the exhibition, researchers created digital prototypes relating to data and transport on the TC2 loom.

HOW TO CHOOSE YOR TC2?

LOOM FRAME

The loom comes in 3 SIZES..

2-Wide frame, 3-Wide frame, 4-Wide frame

MODULES

THINK OF THE LOOM FRAME AS A BOOKSHELF AND MODULES AS BOOKS, THAT CAN BE ARRANGED AND RE-ARRANGED EASILY

Based on what you are WEAVING,
Place MODULES in LOOM FRAME



LOOM FRAME...

2-WIDE LOOM

Footprint: 48"x59"x60"

Maximum weaving width: 28"

Accommodates: Upto 24 modules



3-WIDE LOOM

Footprint: 65"x59"x60"

Maximum weaving width: 43"

Accommodates: Upto 36 modules



4-WIDE LOOM

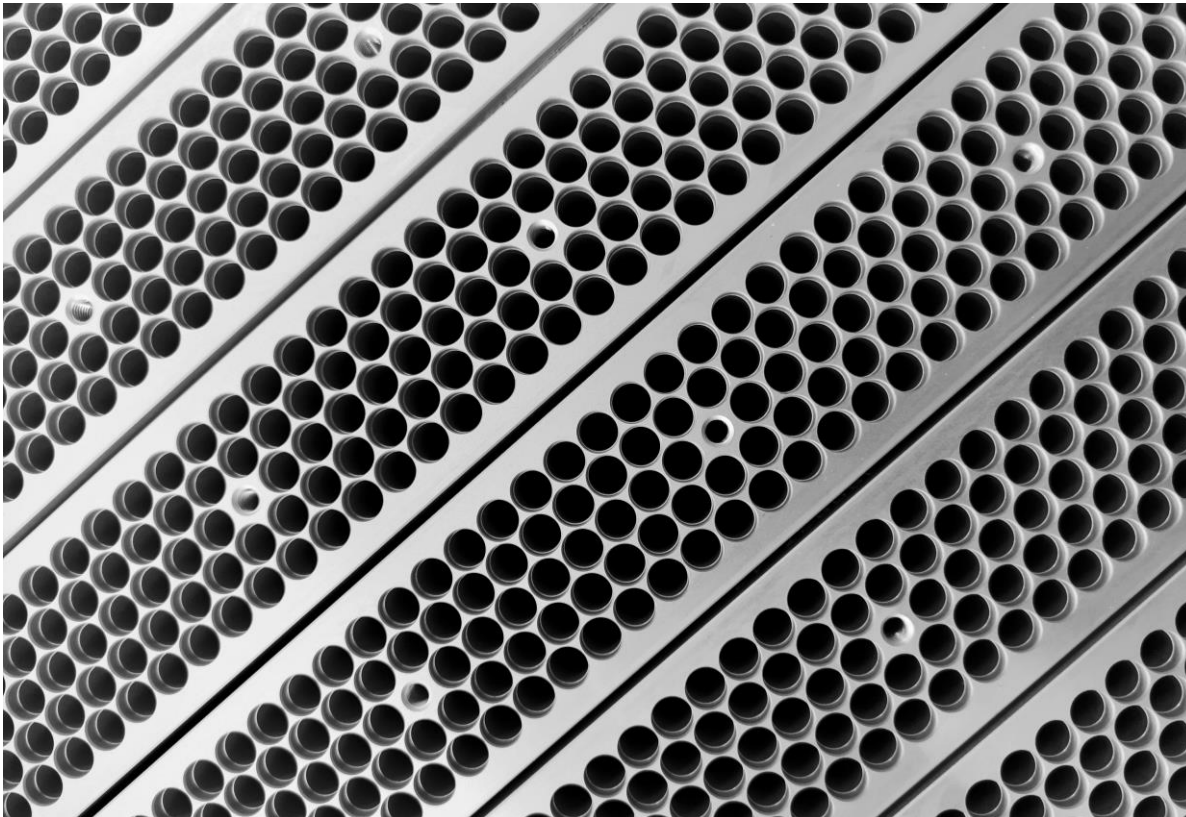
Footprint: 78"x59"x60"

Maximum weaving width: 56"

Accommodates: Upto 48 modules



MODULES...



TC2 CONFIGURATIONS RANGE
FROM 2 TO 48 MODULES

THE MODULES CAN BE
CONFIGURED DEPENDING ON...

1. FABRIC WIDTHS
2. WARP DENSITIES

Each module...

Controls 220 heddles

Enables 14.5" fabric width

Enables 15 epi warp density

HANDCRAFTED IN NORWAY...

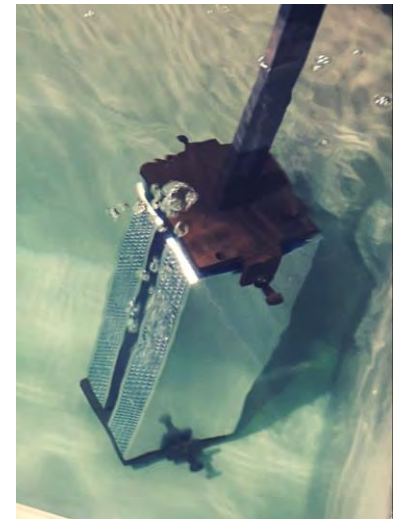
Designed with sophisticated CAD system

Loom frame made from laser-cut steel sheets, making them lightweight and strong

Aluminum beams and profiles are extruded from our specific mold designs

CNC manufactured modules with high millimeter-precision

Anodization is matching requirements of the aviation industry



CREATE FABRICS WITH THE DESIRED...

FIBERS, COLOURWAYS, WEAVE
STRUCTURES, WARP & WEFT DENSITIES

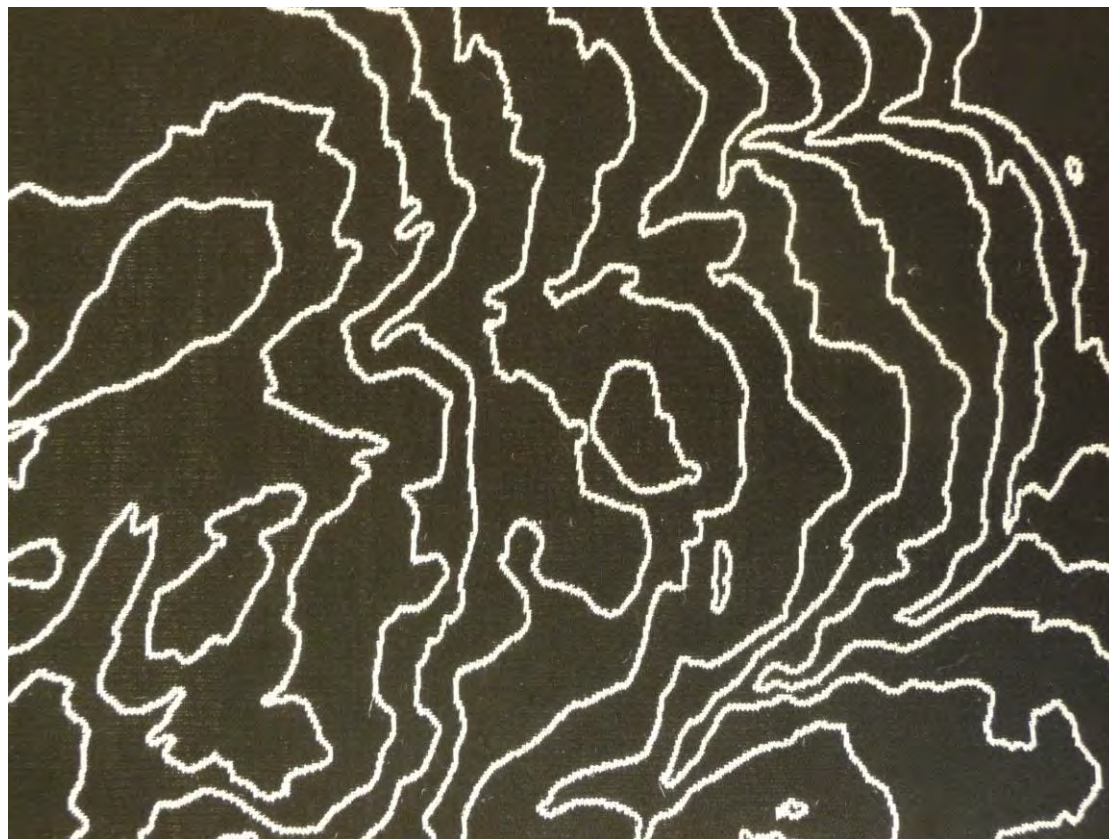
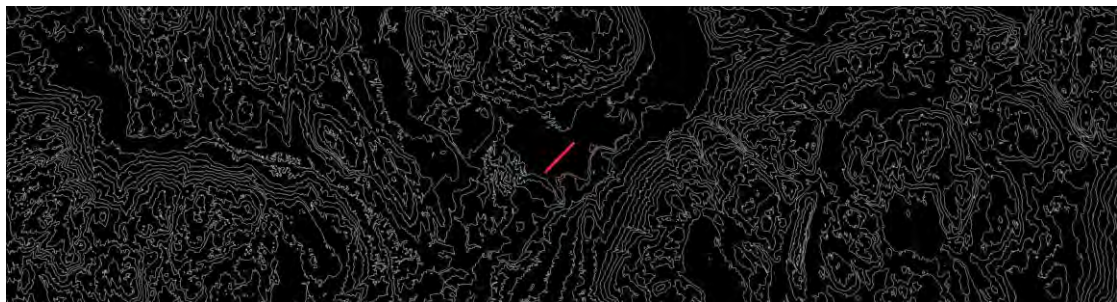
Since the creative process is ongoing,
where making changes is a constant
TC2 offers the possibility to...

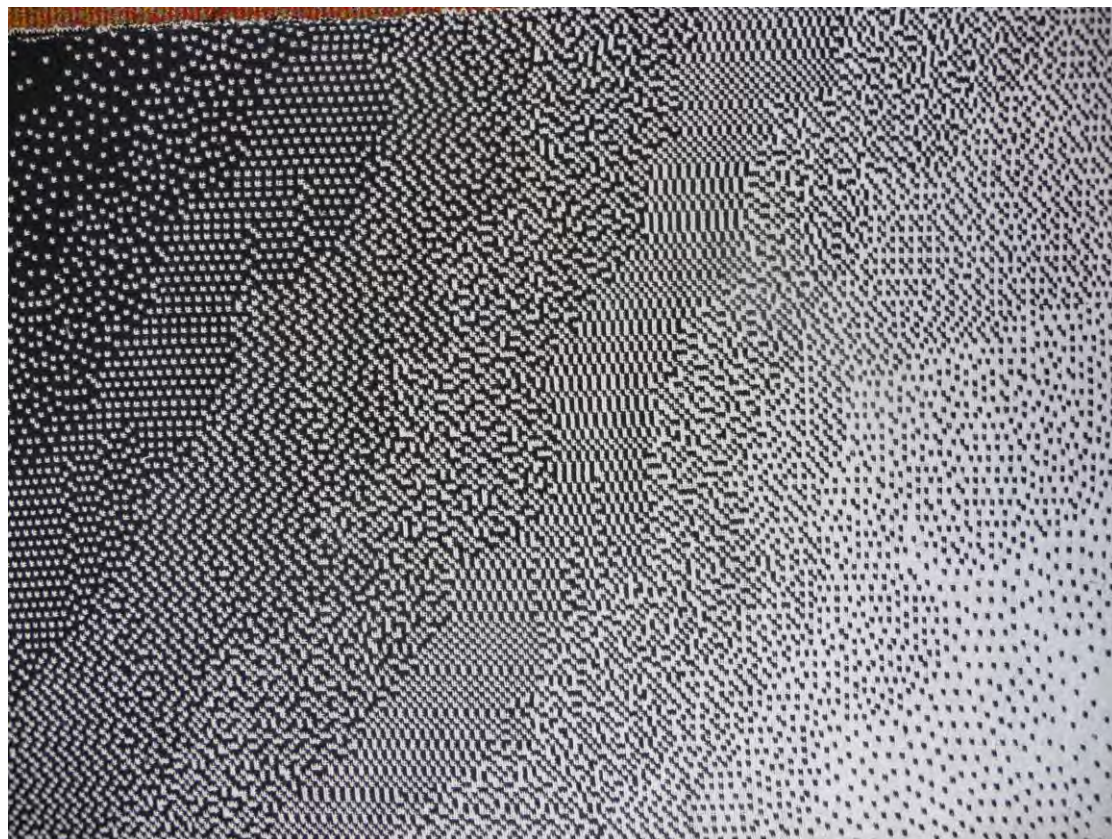
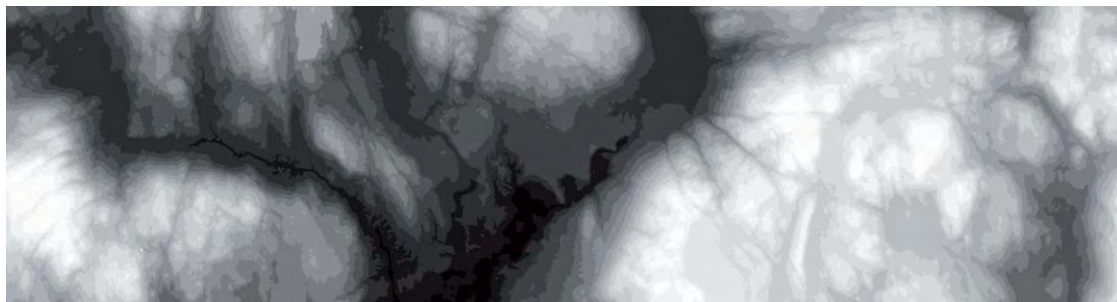
Create and Recreate
Discover and Rediscover
Explore and Experiment

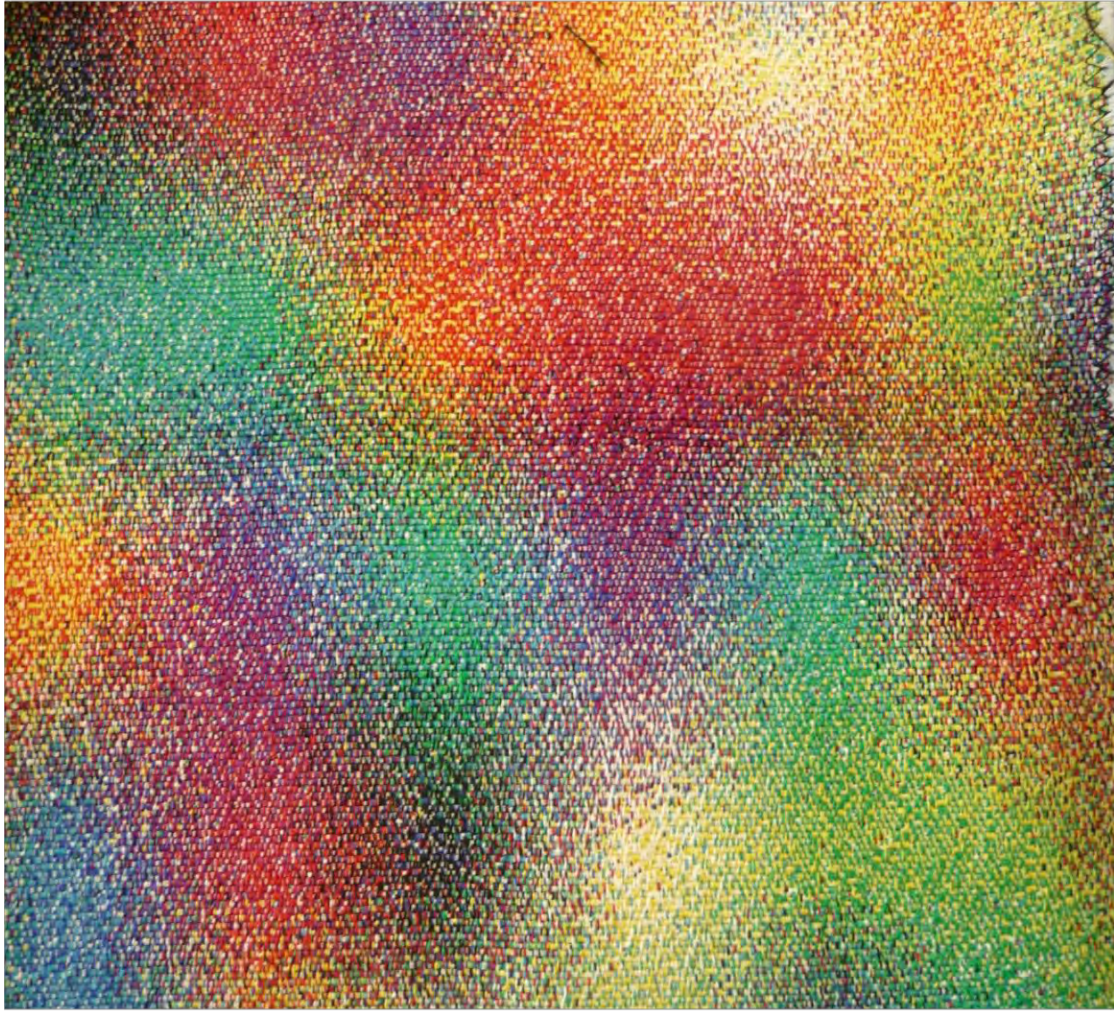
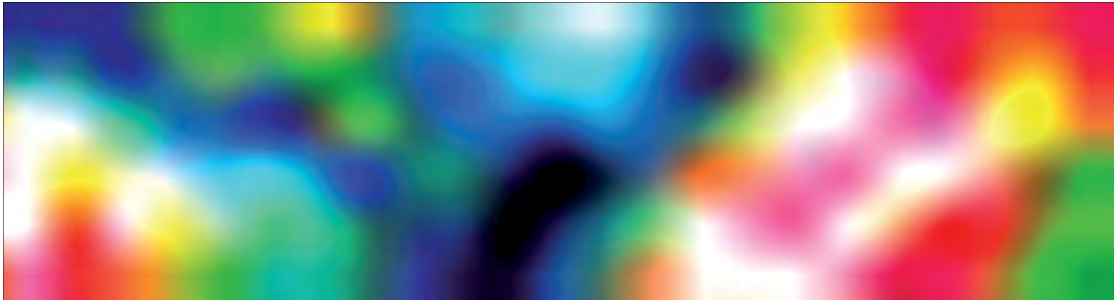


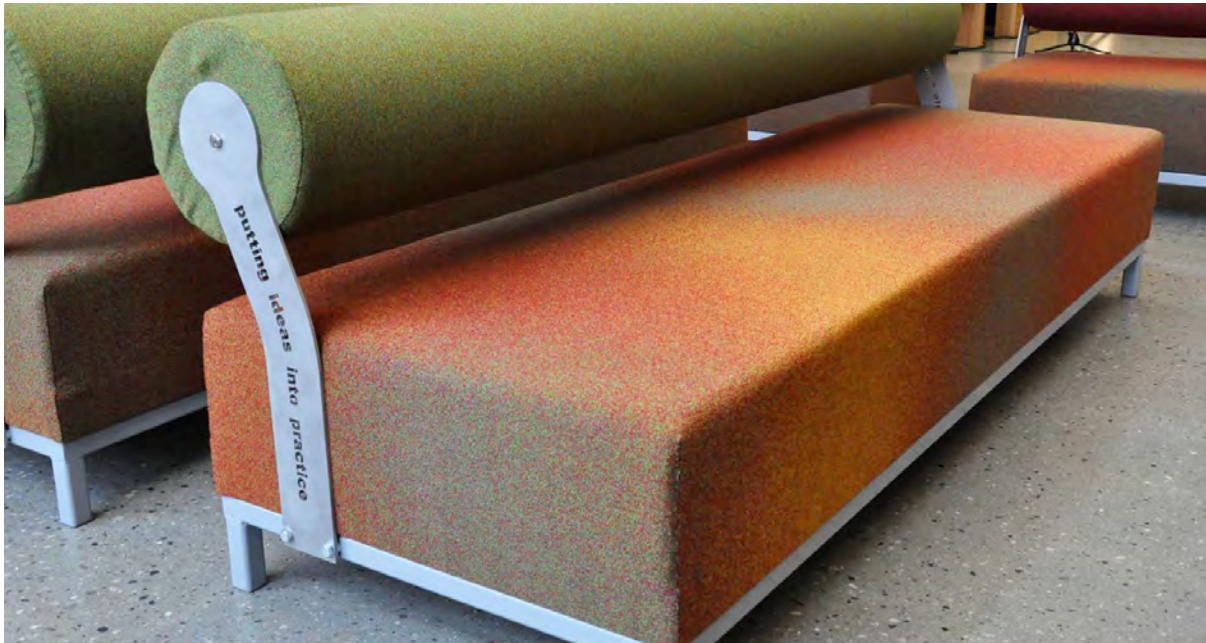
The image shows a large, open-plan office space with a prominent red structural frame. The frame consists of vertical columns and horizontal beams, some of which are painted red. The office is divided into multiple levels. The upper levels have glass railings and wooden paneling. The lower level has a light-colored floor and wooden paneling. There are several large windows and glass partitions. The text "TRONRUD ENGINEERING INTERIORS ARE CREATED ON THE TC2 LOOM!" is overlaid on the left side of the image. The text is white and bold, with a thin horizontal line below it.

TRONRUD
ENGINEERING
INTERIORS ARE
CREATED ON THE
TC2 LOOM!











A COMMON THREAD AMONG WEAVERS, GLOBALLY!

For 25 years, we have walked hand-in-hand with weavers, designers, creators – sharing experiences, influences and inspirations.

And together, we are a part of the Digital Weaving Norway Community.

Together – we've learnt and we've taught and eventually, we've moved closer to discovering and appreciating how this beautiful dance of the threads is played out.

LOOM LOVE...

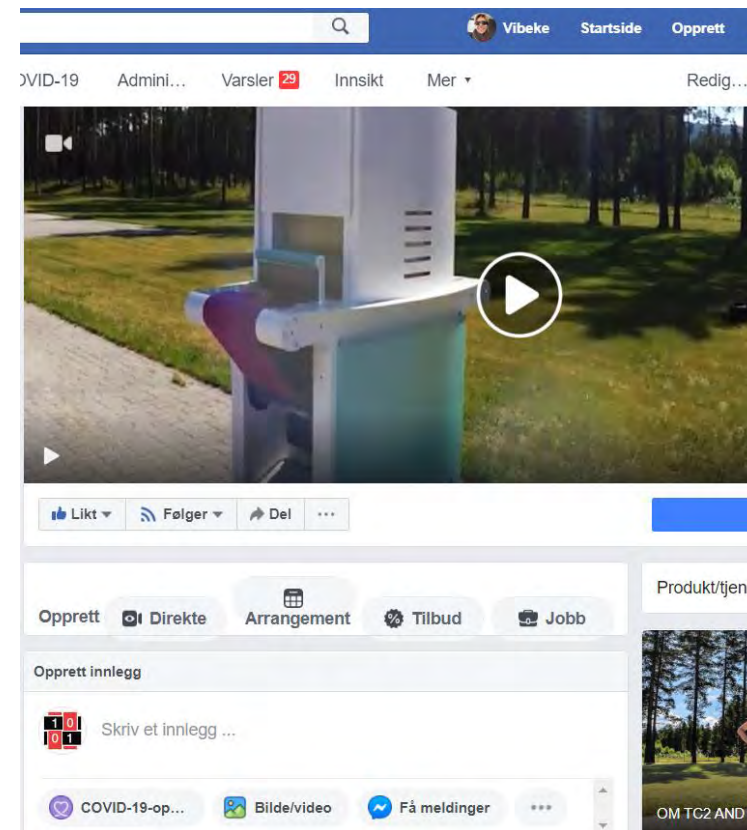
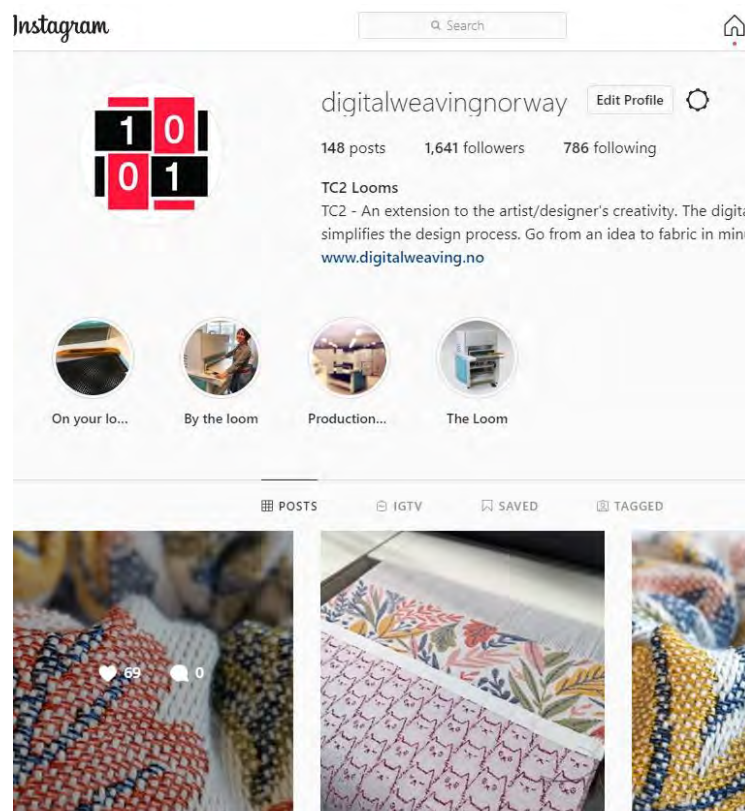
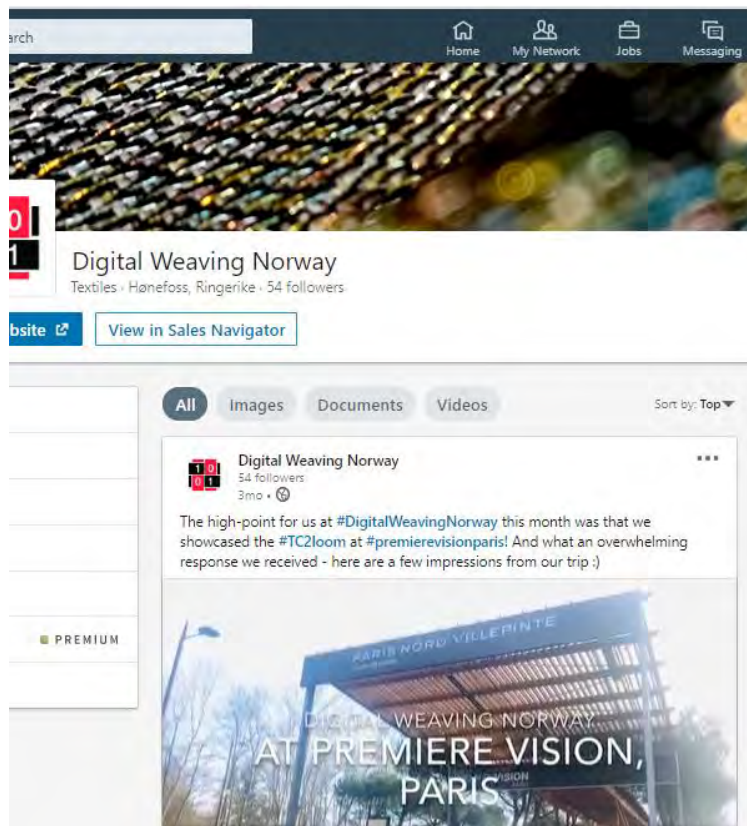
Lia Cook: I love the flexibility of being able to make changes in structure quickly and during the process of weaving a project.

Bhakti Ziek: Because each thread is individually-controlled, I do not have a repeat in my imagery and can use any combination of structures.

Philippa Brock: With the TC2, where you can continually hone and change what it is you are working on.

Outi Martikainen: Every morning, as I start working in the studio, I do feel thankful for the ease that digital weaving provides me in terms of realizing my art.





#TC2LOOM

#DIGITALWEAVINGNORWAY



IF WE HAVE YOU HOOKED, LET'S TALK...

Reach out to us at...

vibeke.vestby@tronrud.no

geetika.nautiyal@tronrud.no

Chances are that you've gathered a handful of information so far, but if you are still wondering or curious, let us know. We'd be happy to take the conversation forward!

www.tronrud.no

www.digitalweaving.no

