

Vardhmān **A&E**



Threads

By
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- Introduction of Vardhman / A&E
- Basic fibre and filament
- Thread construction
- Types of threads
- Thread selection
- Yarn Count System
- Seam related issues and solution
- Value added services

Vardhmān **A&E** Threads

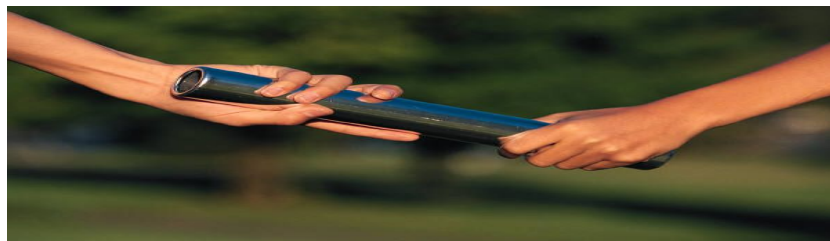
Joint Venture



Vardhman
Group
India



American &
Efird
USA



www.amefird.com

www.vardhmanthreads.com



GLOBAL FOOTPRINT

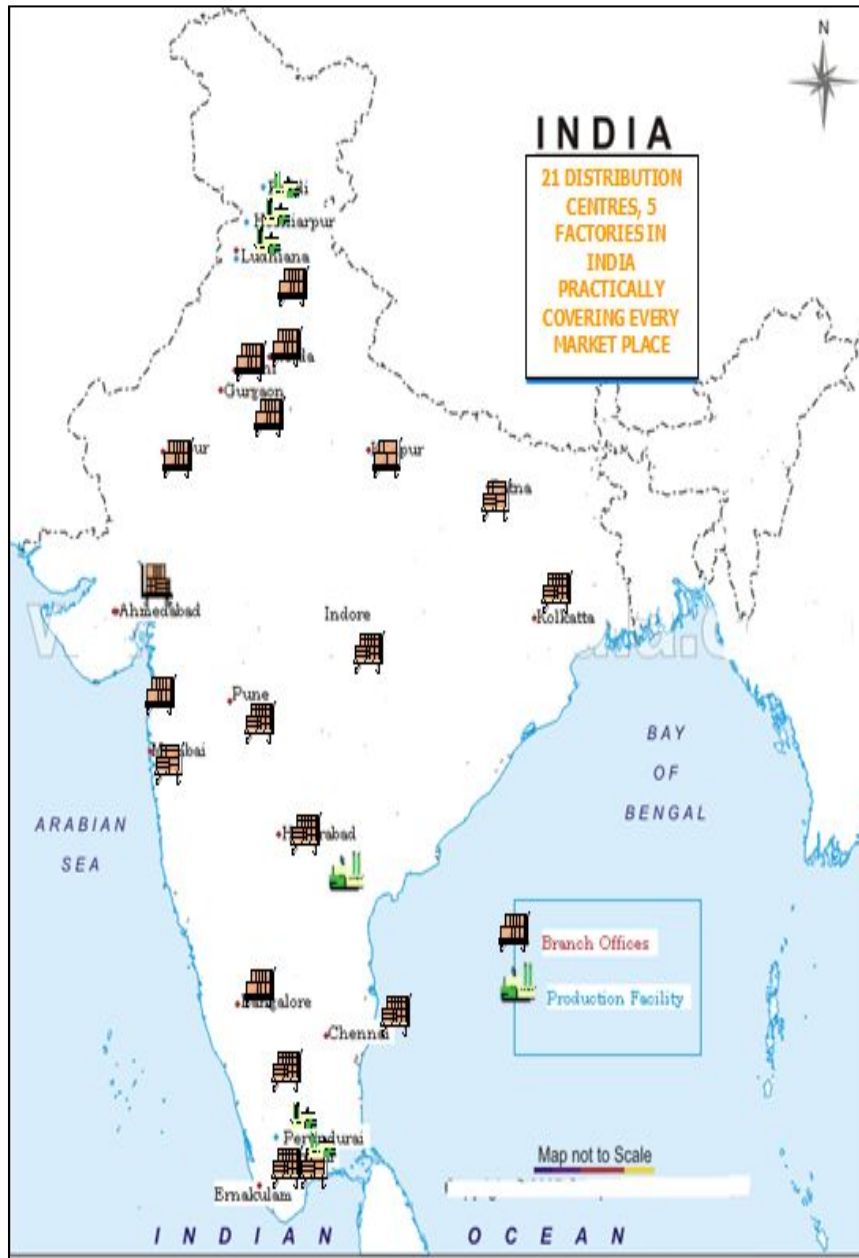


GLOBAL THREAD NETWORK

- ✓ 33 Manufacturing Facilities
- ✓ 68 Service centers
- ✓ 42 Countries : 125 Years of Expertise

www.amefird.com

www.vardhmanthreads.com



Vardhman A&E threads in India has wide network.

- ❖ 5 Manufacturing units, located near to
- ❖ manufacturing centers.

❖ 23 distribution centers in India

❖ R&D center for Development

❖ 300+ key Indian exports are our customers, like

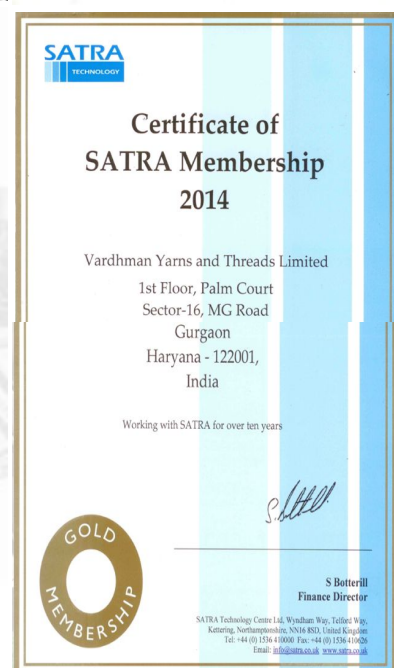


❖ 250+ dedicated members to serve customers.

❖ 3 colour communication center for faster shade development



Our Products and Manufacturing processes are certified by major testing labs.



- ❖ Oeko tex Cotton & Polyester
- ❖ ISO 14001:2004 - Environment Management system
- ❖ IS/ISO 9001:2008
- ❖ OHSAS 18001:2007 - Occupational Health and safety management system
- ❖ Satra Membership
- ❖ ISO/TS 16949:2009 total quality system

We are Industry leaders in EHS practices globally



SUSTAINABILITY
SOCIETY | ENVIRONMENT | ECONOMY



Let's Understand thread



❖ Natural Source

➤ Vegetables

- ☐ Cotton
- ☐ Banana



➤ Animal

- ☐ Wool



➤ Minerals

- ☐ Asbestos



❖ Manmade Source

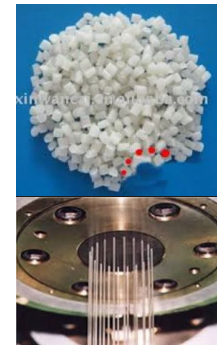
➤ Regenerated

- ☐ Rayon



➤ Synthetics

- ☐ Polyester
- ☐ Polyamide
- ☐ Polypropylene
- ☐ Polyvinyl



❖ On raw material basis

- Cotton
- Polyester
- Nylon

❖ On construction basis

- [Staple Spun](#)
- Continuous Filament
- Corespun

❖ On Finish basis

- Mercerised
- Glace
- Bonded
- Lubricated
- Fire retardant

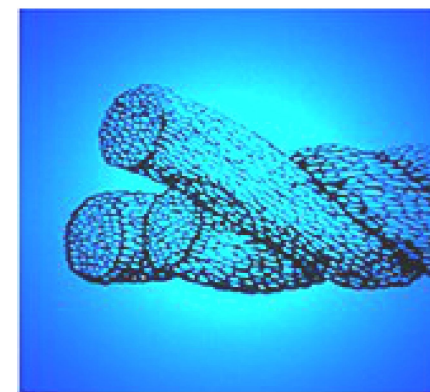
❖ On usage basis

- General Sewing
- Embroidery
- special application (blind hem, baby over lock)
- Heavy wash

Tex	Staple Spun Cotton	Staple Spun Polyester	Poly Cotton Corespun	Poly Poly Corespun	Textured Polyester
18	-	650	-	900	650
21	-	750	-	1000	-
24	-	900	1050	1225	
27	-	1050	-	-	-
30	800	1200	1500	1650	-
35	1050	-	-	-	1350
40	1400	1650	1900	2100	-
60	1900	2450	2950	3300	-
80	2350	3400	3600	4100	-
105	3400	4400	4700	4900	-
120	3600	5200	5500	6200	-

Strength in Grams

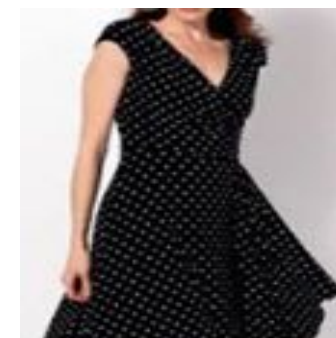
- ❖ Made with staple spun polyester fibers.
- ❖ Hairy surface
- ❖ Soft and supple feel
- ❖ Better flexibility
- ❖ Good sewability



Vardhman/A&E Brand

Staple Spun Polyester - **Perma Spun®**

Suitable for general Garment sewing -



- ❖ Combination of filament and fiber
- ❖ Polyester filament at the core and polyester staple fibers wrapped around.
- ❖ Combines the physical properties of a polyester filament (strength, elongation, low shrinkage) with the aesthetic properties of a staple polyester wrap (softness, appearance).



Vardhman/A&E Brand

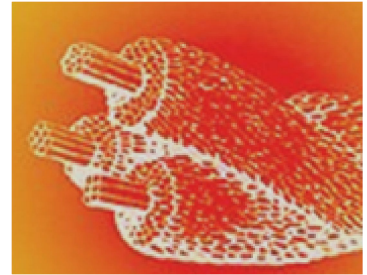
Poly core Poly Wrap - Perma Core®

Suitable for Fine Tailored Garment, Knits Wear, High performance garments



Core Spun - Poly Core Poly Wrap - Super Bleach

- ❖ Combination of filament and fiber
- ❖ Polyester filament at the core and polyester staple fibers wrapped around.
- ❖ Special dyes used to ensure the colour remains intact even after bleach wash.



Vardhman/A&E Brand

Poly core Poly Wrap - Perma Core® SB

Suitable for garment meant for bleach wash





- ❖ Combination of filament and fiber
- ❖ Polyester filament at the core and Cotton staple fibers wrapped around.
- ❖ Combines the physical properties of a polyester filament (strength, elongation, low shrinkage) with the aesthetic properties of a staple cotton wrap (softness, appearance, heat resistance, colour fastness to harsh Washes).

Vardhman/A&E Brand
Poly Core Cotton Wrap Corespun

D Core®

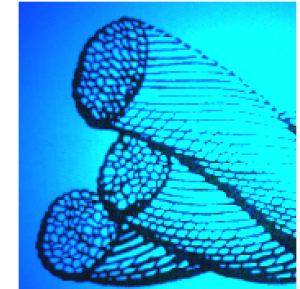
D Core® Indigo

D Core® Core Dyed

Suitable for heavy Wash Garment, Outer wear & high heat resistance



- ❖ Continuous filaments are twisted together.
- ❖ Normally synthetics as polyester, nylon..
- ❖ Regularity in filament cross section as it can be controlled.
- ❖ Slipper in nature & very good strength.
- ❖ In apparels, this type of threads are used in **Blind Hemming**.



Vardhman/A&E Brand
Continuous Filament Polyester
Anefil®

Suitable for blind hemming application for all types of garments.





- ❖ Filaments with triangular cross section instead of regular rounder cross section.
- ❖ This construction increases luster.
- ❖ Being a high tenacity thread, offers break free embroidery on high speed Computer Multi Head embroidery.

Vardhman/A&E Brand

Trilobal Polyester

Signature®

Supe Brite®

Pride

Suitable for high speed shiny (Glossy) computer embroidery .



Thread selection based on application

- ❖ Strength / Tenacity
- ❖ Seam Construction
- ❖ Elongation
- ❖ Abrasion resistance
- ❖ Color fastness
- ❖ Resistance to chemicals

Critical factors :

- Thread strength
- Stitch type
- Stitch rating
- Seam type
- Fabric type
- Needle size & point

Seam strength = $SPI \times STS \times 1.5$ = lockstitch
 $SPI \times STS \times 1.7$ = chainstitch

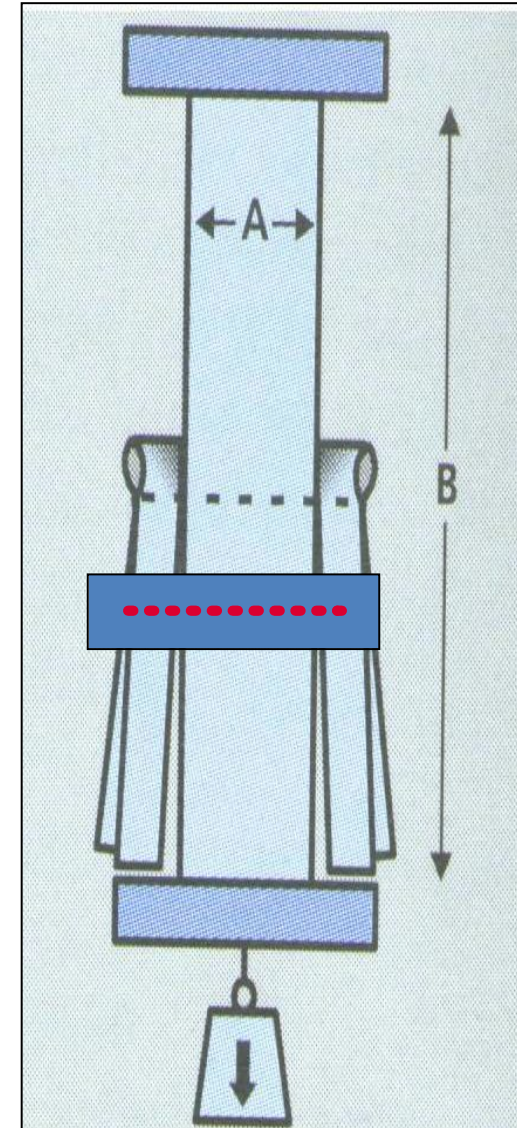
e.g.

for a seam with a density of 16 spi & a thread with a 1100 gms STS

seam strength for lockstitch = $16 \times 1100 \times 1.5 = 26,400$ gms.
= 26.4 kgs

seam strength for chainstitch = $16 \times 1100 \times 1.7 = 29,920$ gms.
= 29.9 kgs

The seam is sewn at right angles to the direction of load.



Yarn Count system helps us in ascertaining the thread thickness.

There are 2 ways of doing so

- Fixed Weight

- In this case the Weight is kept constant and we let the length grow

- Fixed Length

- In this case the length is kept constant and let the weight grow



[Both weigh 80 kg](#)

Fixed Weight

In this case the Weight is kept constant and we let the length grow

In the image, both the boxers are weighing 80kg but one is taller than the other.

There are 2 ways of Yarn count in this -

- Ne - (Numeric English)
 - No. of hanks of 840 yards per pound
- Nm - (Numeric Metric)
 - No. of hanks of 1000 mtrs per kilogram

So, Lower the count thicker the thread and higher the count finer the thread.

[Ne 20/Nm 20 will be thicker than Ne 40/Nm40](#)



Fixed Length

In this case the length is kept constant and let the weight grow

In the image, both the person are of same height but one is fatter than the other.

There are 3 ways of Yarn count in this -

- Tex - Weight of 1000 mtrs thread in grams
- Denier - Weight of 9000 mtrs thread in grams
- D Tex - Weight of 10000 mtrs thread in grams

So, Lower the count finer the thread and higher the count thicker the thread.

[Both are of same height](#)

Seam related concerns and potential solution

- ★ Seam Breakage

- ★ Seam Grin

- ★ Skip Stitches

- ★ Seam Puckering

- ★ Seam Slippage

Seam Breakage

Seam breakage happens due to two major rason

- Seam breakage due to incorrect thread and seam selection.
- Mechanical damage in washing process

Remedy

- Selection of right threads (specially the bottom thread).
- Adopting right garmenting practice specially when garment is subjected to ballooning and scraping.



- When two pieces of fabric are pulled at right angles to the seam, a gap is revealed between the two pieces of fabric revealing the thread in this gap.
- ❖ Corrective actions
 - ❖ Increase stitching tensions
 - ❖ Use a higher stitch rating



Causes

Solutions

Failure of hook, looper, or needle to enter the thread loop at correct time	▶ Check machines clearances and timing. ▶ Check needle is inserted and aligned correctly ▶ Use needle with deeper scarf.
Thread loop failure	▶ Change needle size/style ▶ Check thread take-up and check loop formation
Flagging of fabric due to poor presser foot control or too large a throat plate hole	▶ Adjust presser foot pressure ▶ Change throatplate to match needle
Needle deflections or bent needles	▶ Use a reinforced needle ▶ Check needle clearance and reset needle guard
Incorrect sewing tension in needle or under thread	▶ Adjust thread tension
Poor loop formation	▶ Check loop formation ▶ Verify thread selection ▶ Check thread twist and thickness

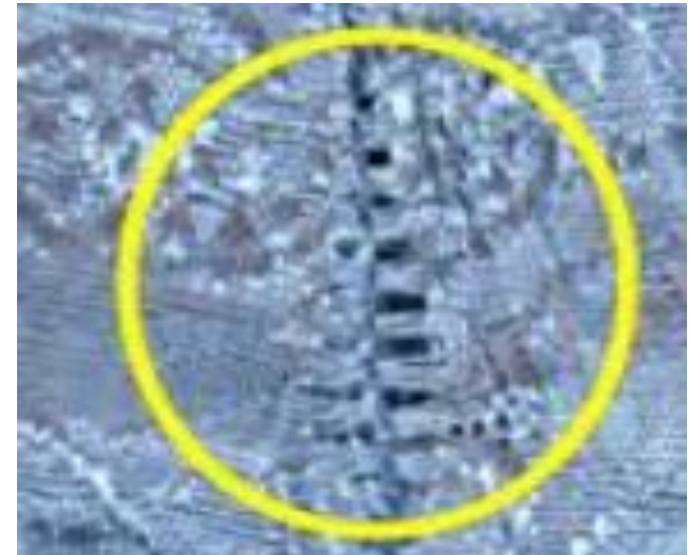


A fabric related issue

- Happens mainly in 2 types of fabrics :
 - fabrics with low no. of warp & weft yarns.
 - fabrics where C.F. yarns are used in the weave.
- The fabric on either side of the seam distorts as the fabric yarns slide away resulting in a permanent gap.

❖ Corrective Actions

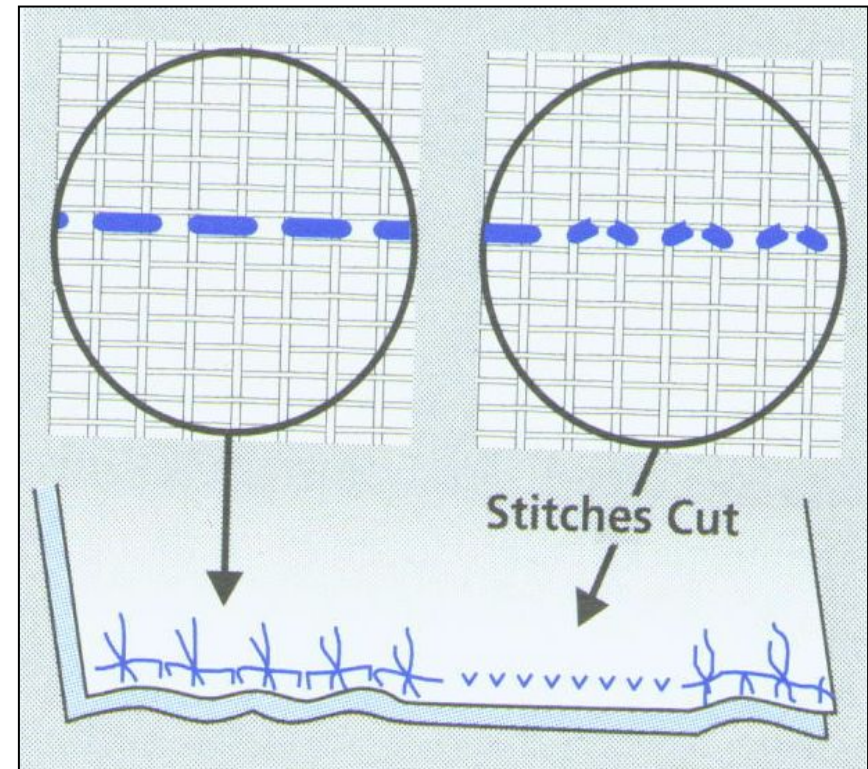
- ❖ Increase seam allowance
- ❖ Use a higher stitch density
- ❖ Opt for a lapped fell seam
- ❖ Change to Chain Stitch



Seam Pucker

- ★ Tension pucker
- ★ Feed pucker
- ★ Shrinkage pucker
- ★ Inherent pucker
- ★ Fabric flagging

- Caused by high thread tension during sewing.
- More pronounced when synthetic threads are used.
- These threads on account of high stretch properties elongate more during sewing.
- After sewing the threads recover from the stretched state pulling the fabric with it.



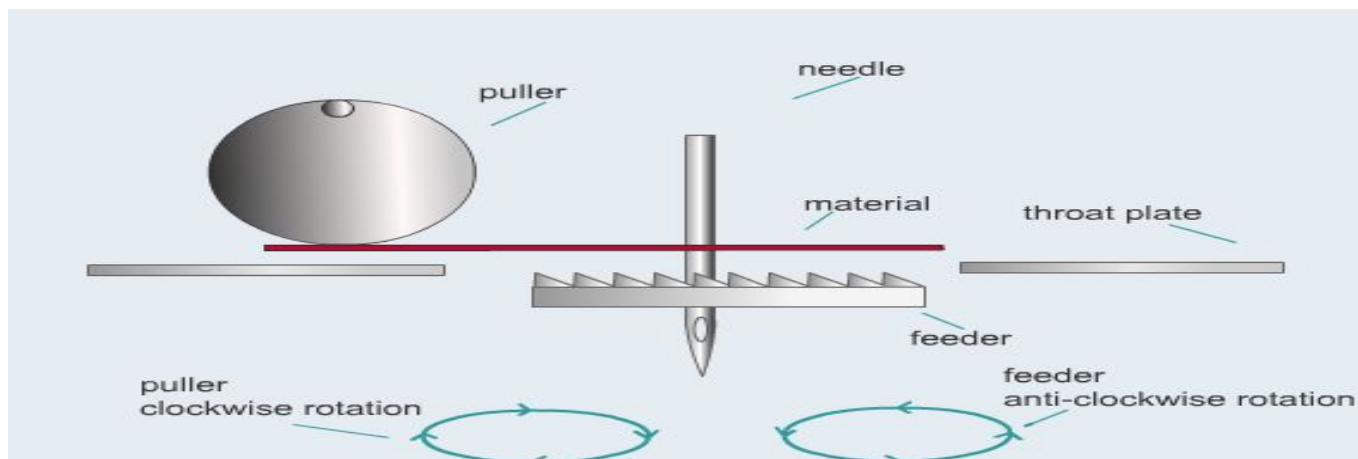
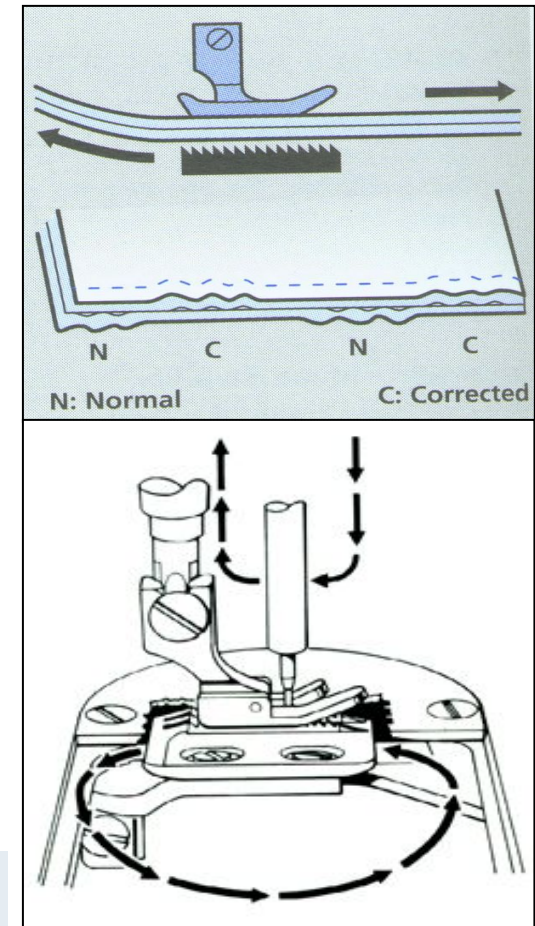
Remedy:

- Thread tensions have to be kept as low as possible.
- Use low elongation thread.

- Encountered when sewing very fine and slippery fabrics .
- The plies of fabric tend to slip over each other resulting in uneven feed leading to pucker

Remedy :

- [Opting for advanced types of feed systems like compound or unison feed.](#)
- Puller feed is more cost effective.



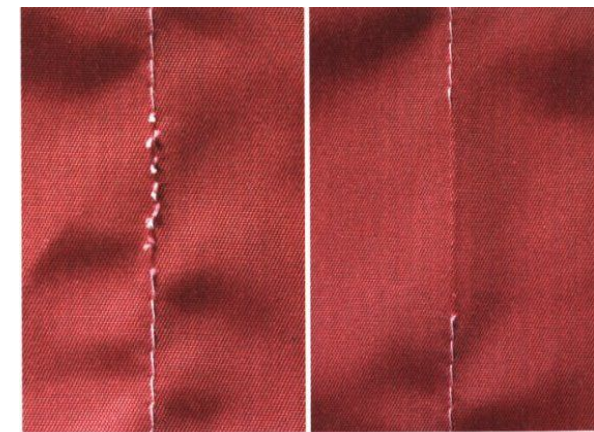
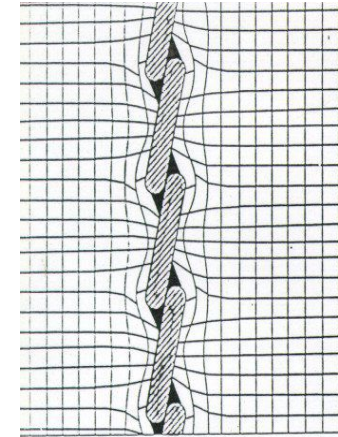
There are 2 types of Shrinkage Pucker

- Wet Shrinkage Pucker -
 - During the wash process the thread in the seam shrinks, pulling the fabric with it. More so when using cotton threads.
 - ❖ Opt for a low Shrinkage thread preferably Polyester.
- Dry Shrinkage Pucker -
 - Normally happens when synthetic threads are used. The heat destabilizes the molecular structure of the thread causing it to contract.
 - ❖ Opt for a low Shrinkage thread preferably poly core cotton wrap corespun.

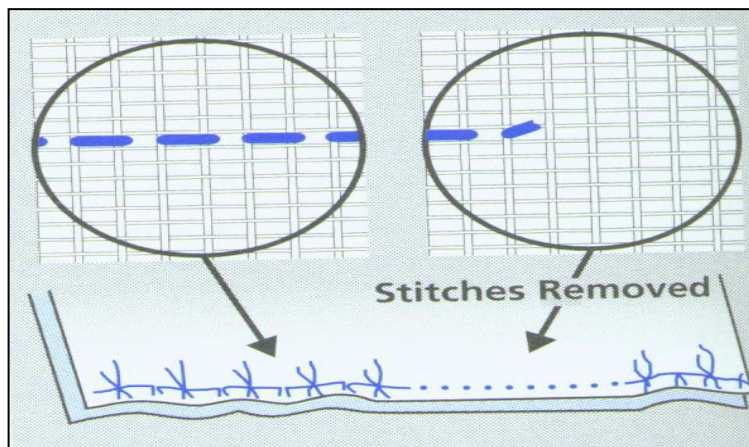


Inherent Pucker

- Normally seen when sewing densely woven materials.
- This occurs because the needle forcibly displaces the warp & weft ends of the dense weave to a significant extent.
- These displaced ends are pushed upwards to the surface of the fabric and appear as pucker.
- This is also known as 'STRUCTURAL JAMMING'



After cutting the sewing thread, the puckering remains After pulling the pieces of thread out of the stitch holes, the puckering disappears



Remedy

- Opting for finer needles & threads
- Opt for a chain stitch in place of a lock stitch
- Reduce stitch density
- Biased stitching

➤ A machine related issue

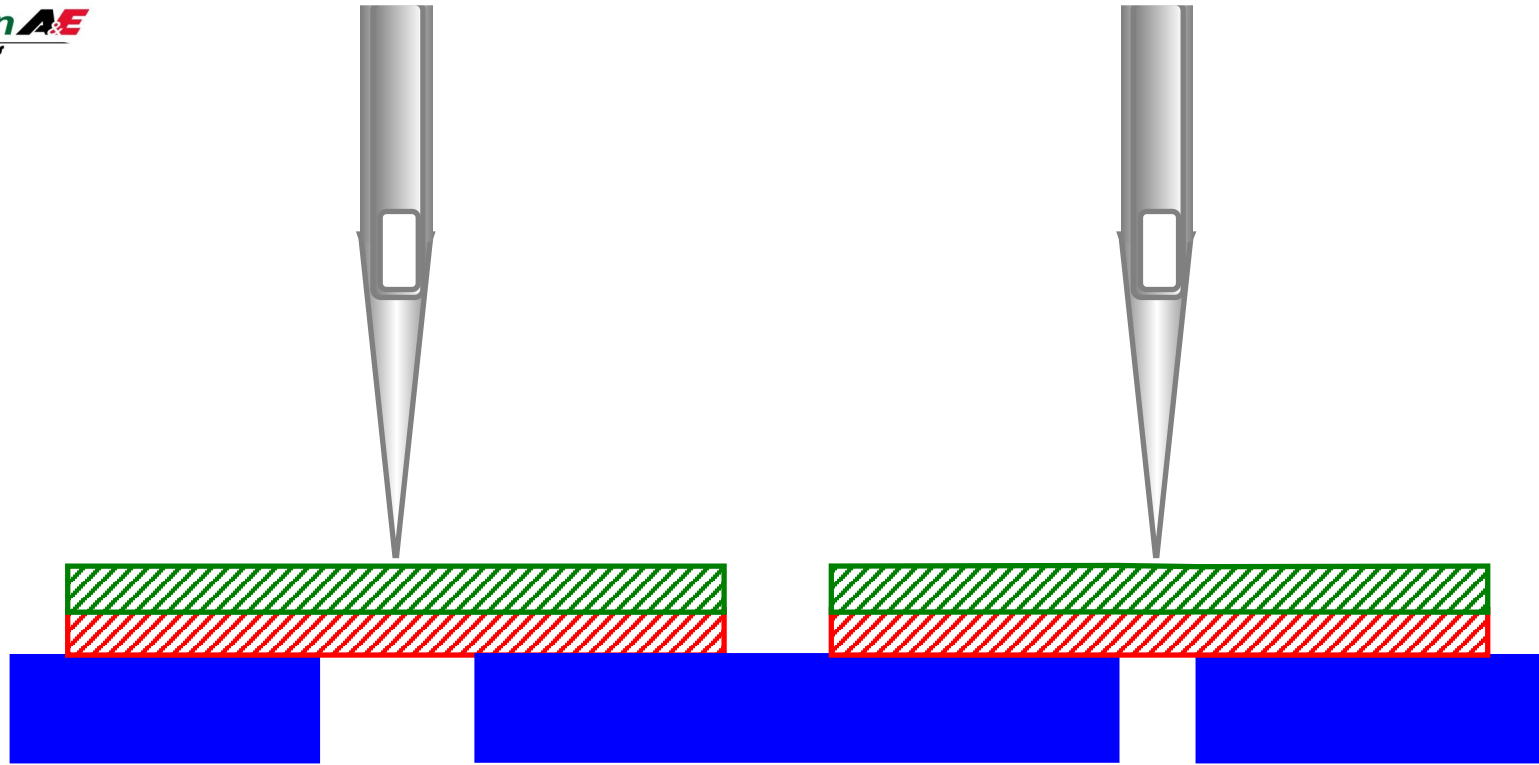
- ❖ the throat plate aperture enlarges due to wear & tear
- ❖ while sewing the needle pushes the fabric through the aperture before penetrating the fabric.
- ❖ This can also happen when the needle size (thickness) is changed and if the throat plate is not changed accordingly.

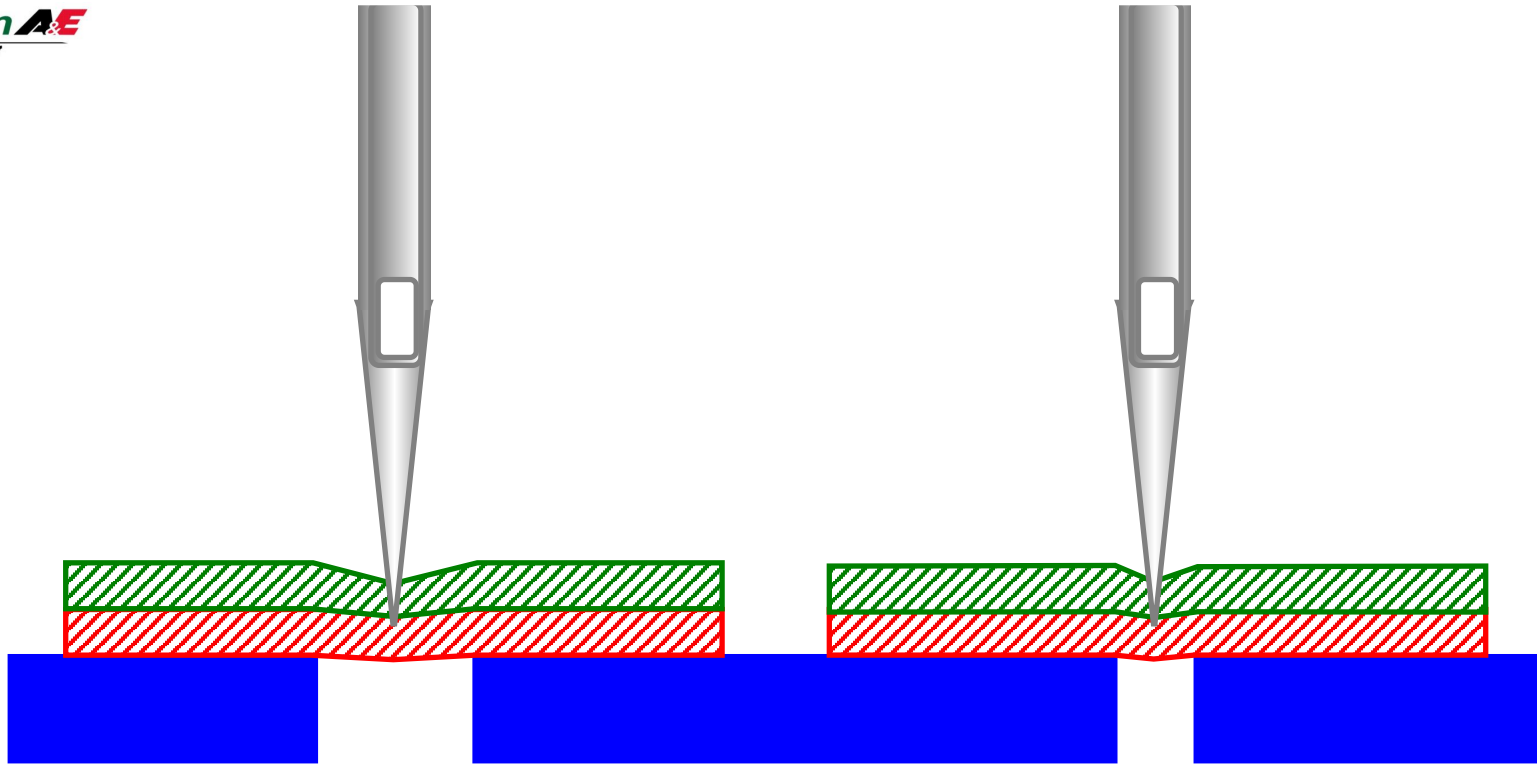
Remedy

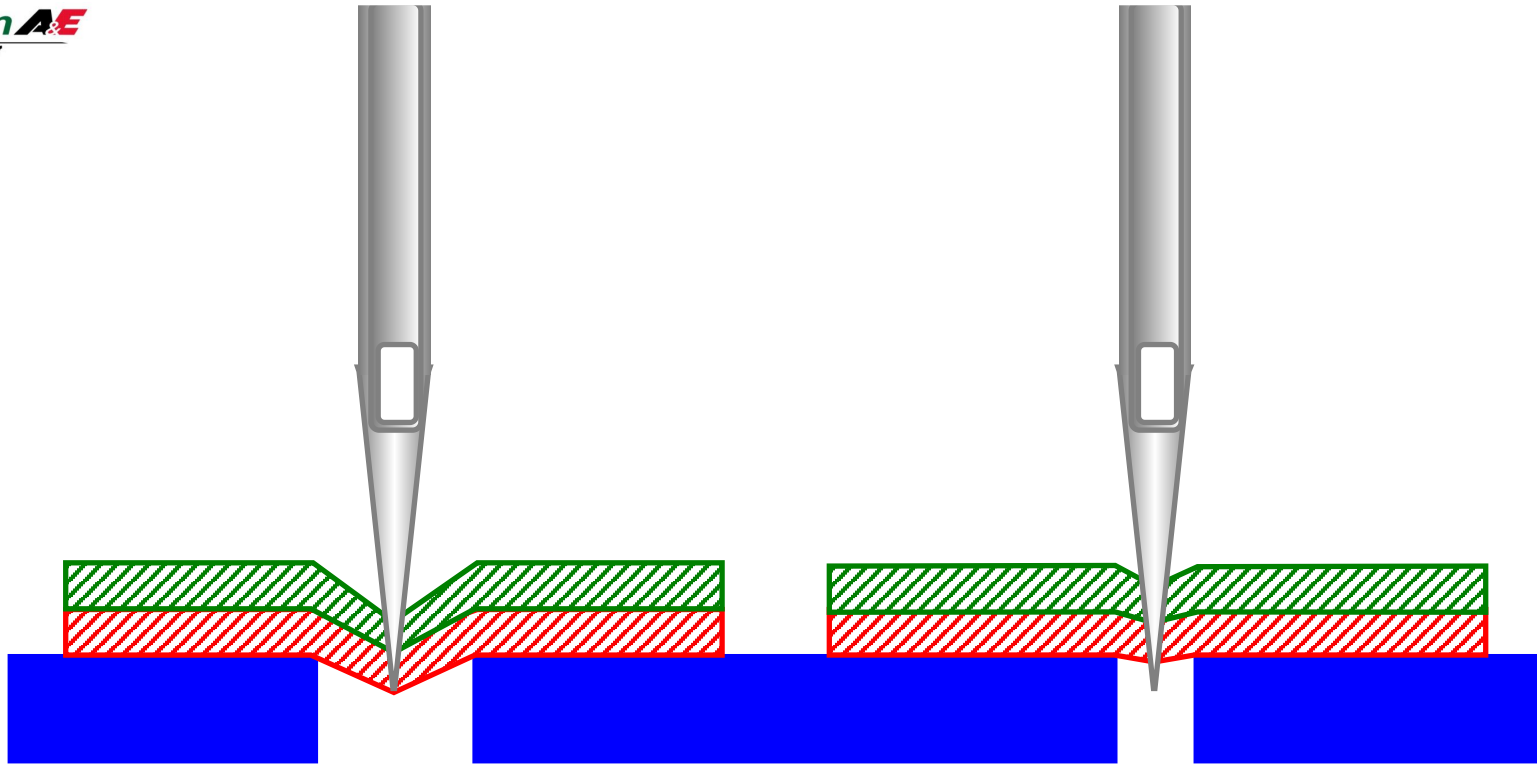
- Throat plates must be changed at regular intervals after checking for wear & tear
- Throat plates must be changed in accordance with the needle size even if there are no signs of wear & tear.

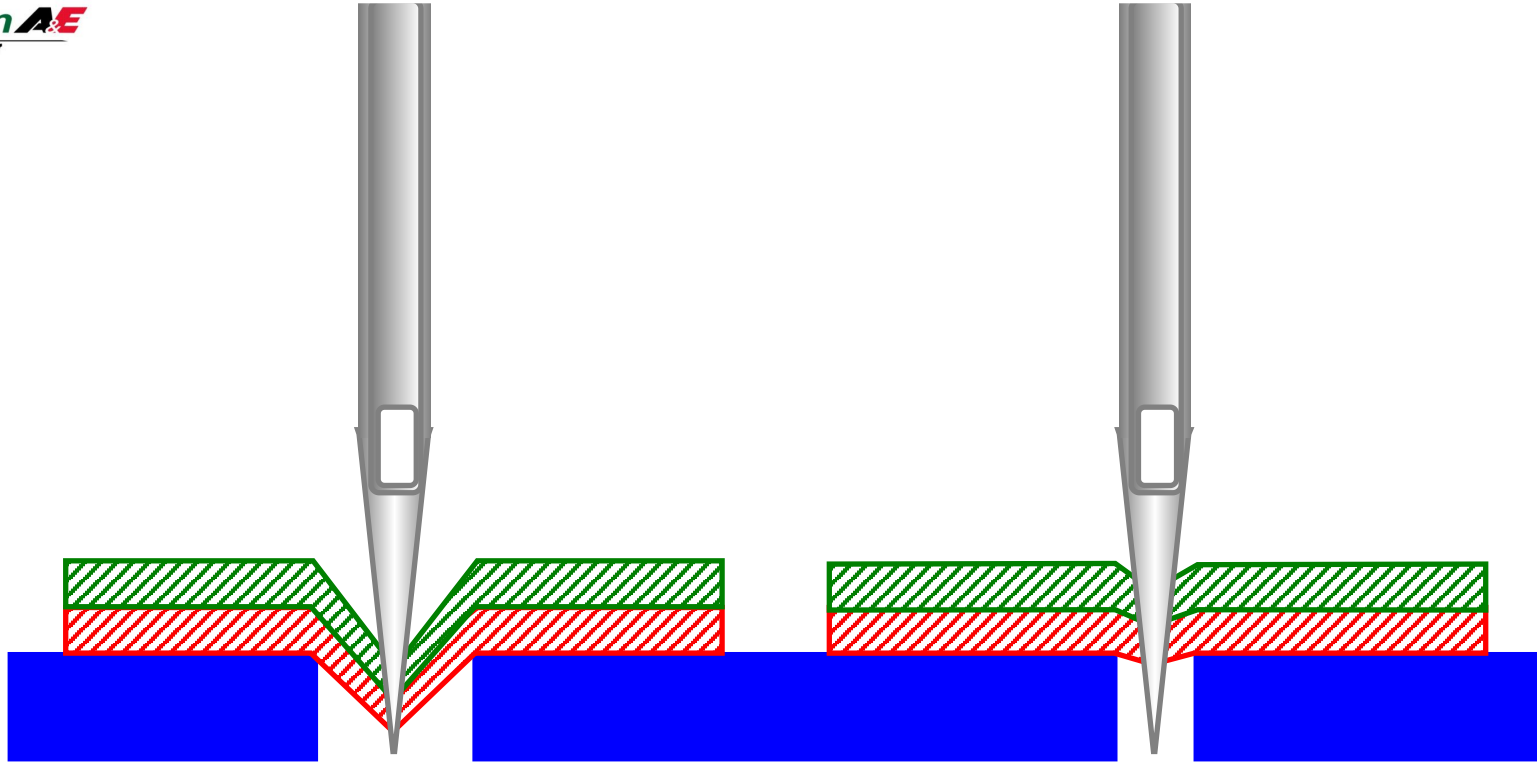
Needle Size	- Nm	60	65	70	80	90	100	110	120
Throat plate aperture size	- Nm	100	120	120	140	160	160	200	200

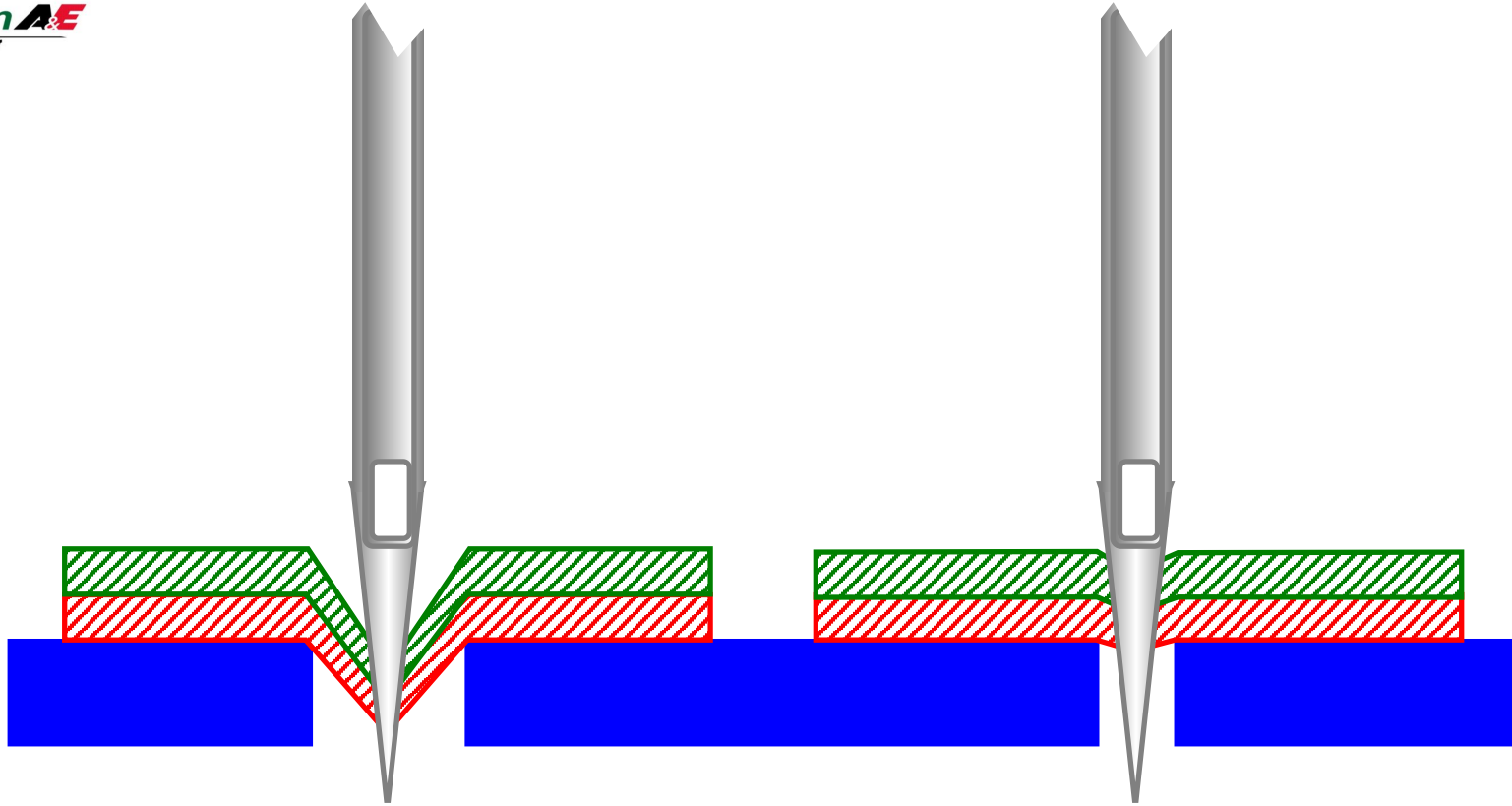


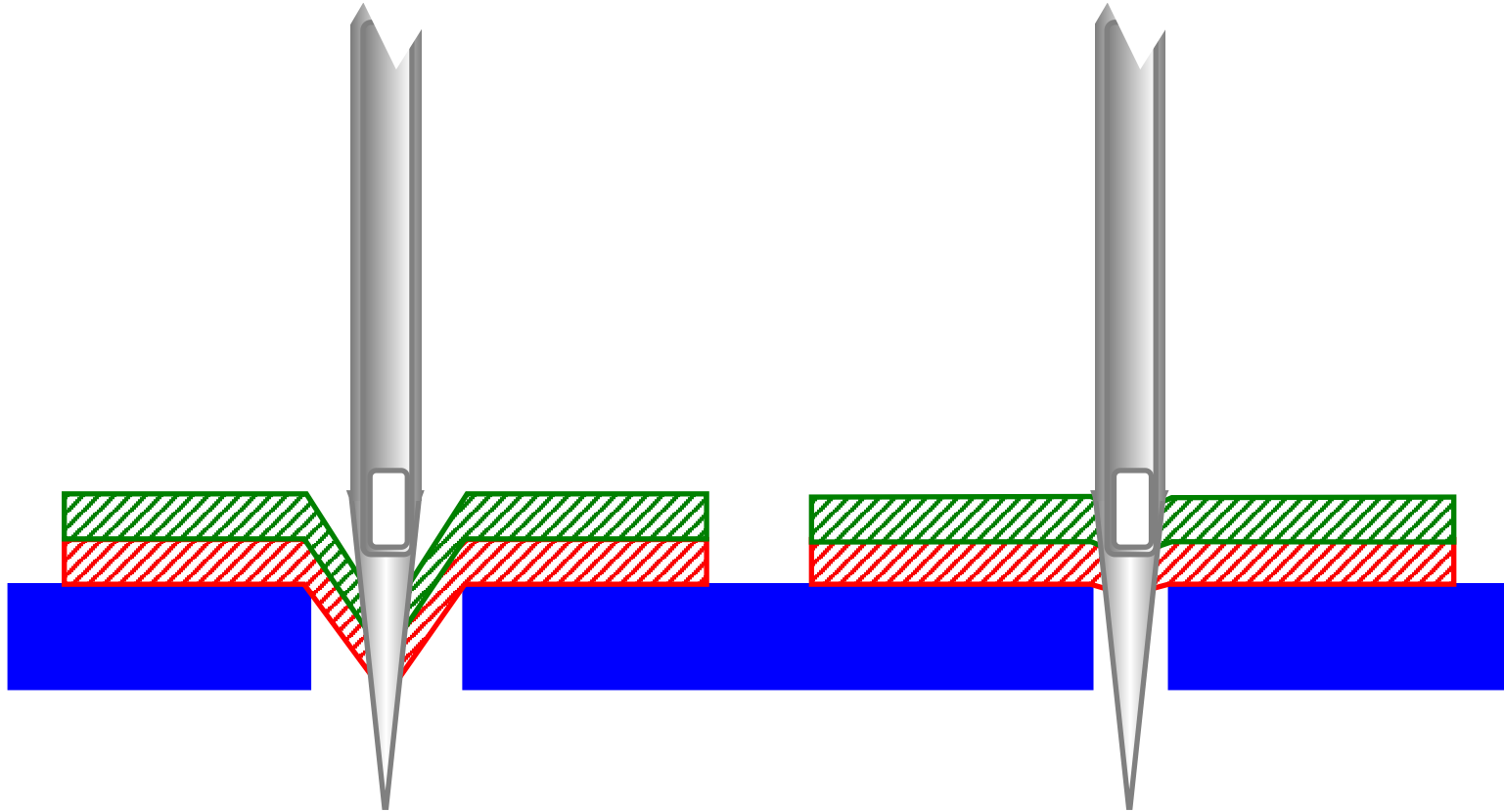


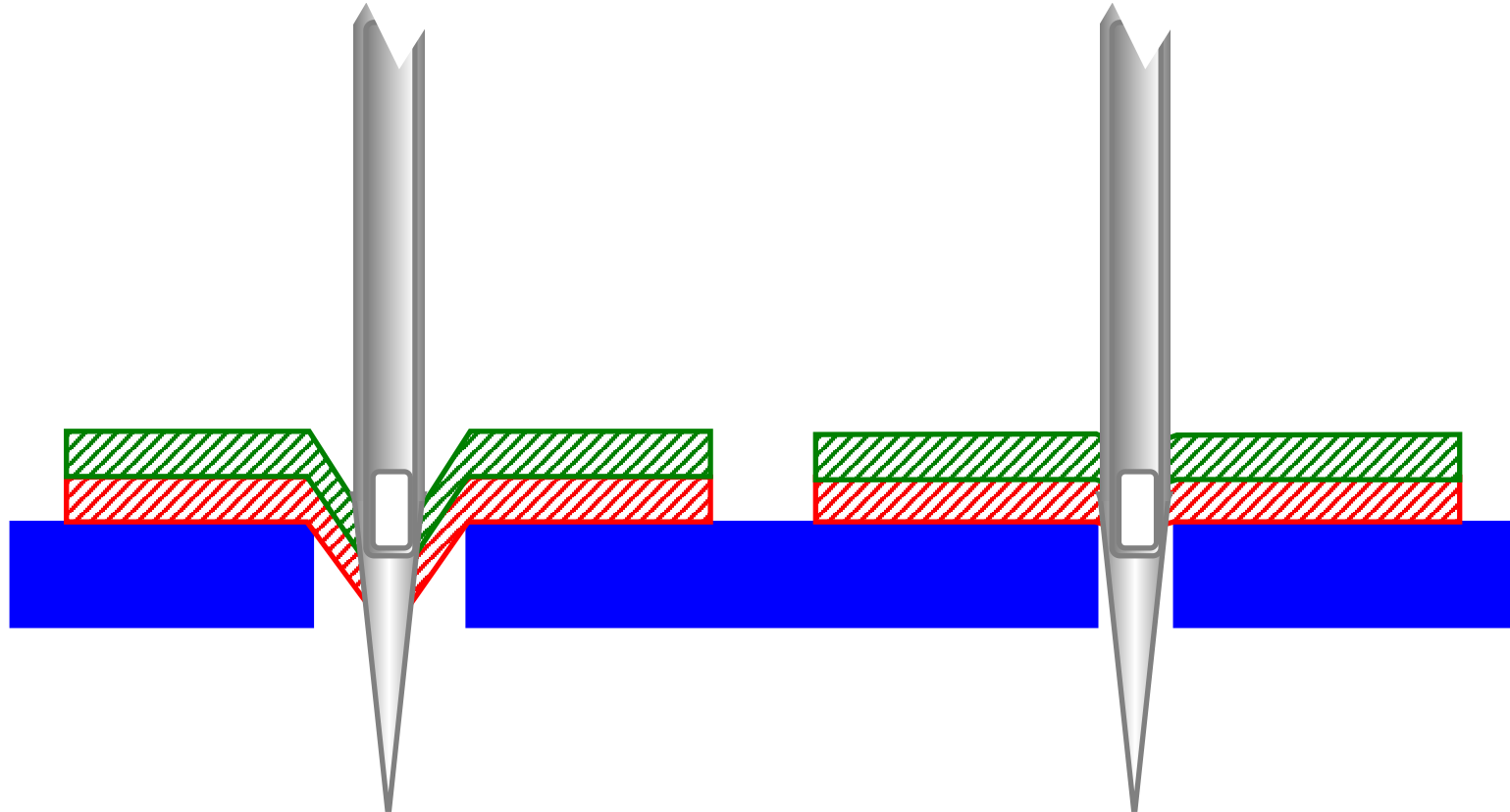


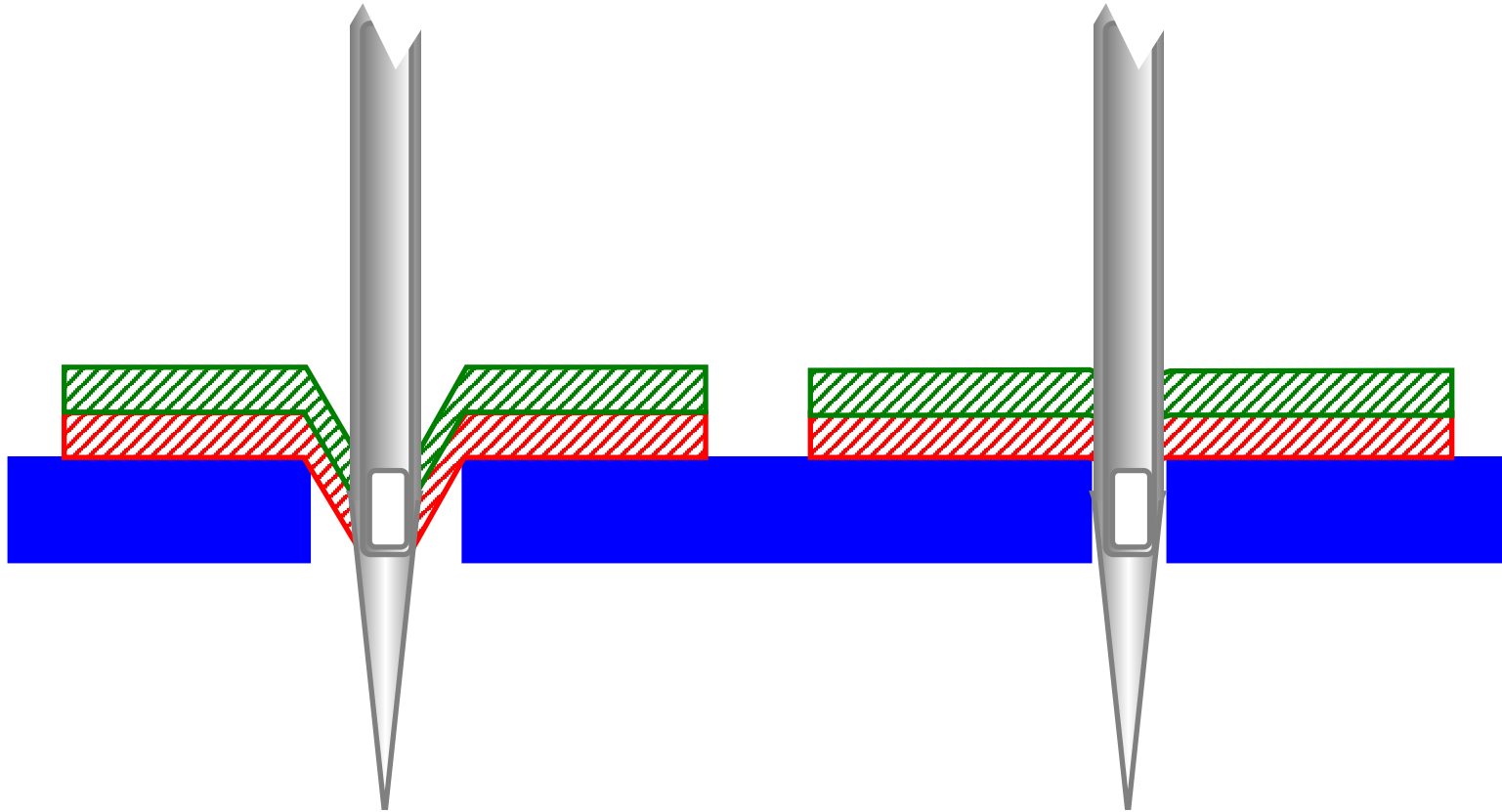


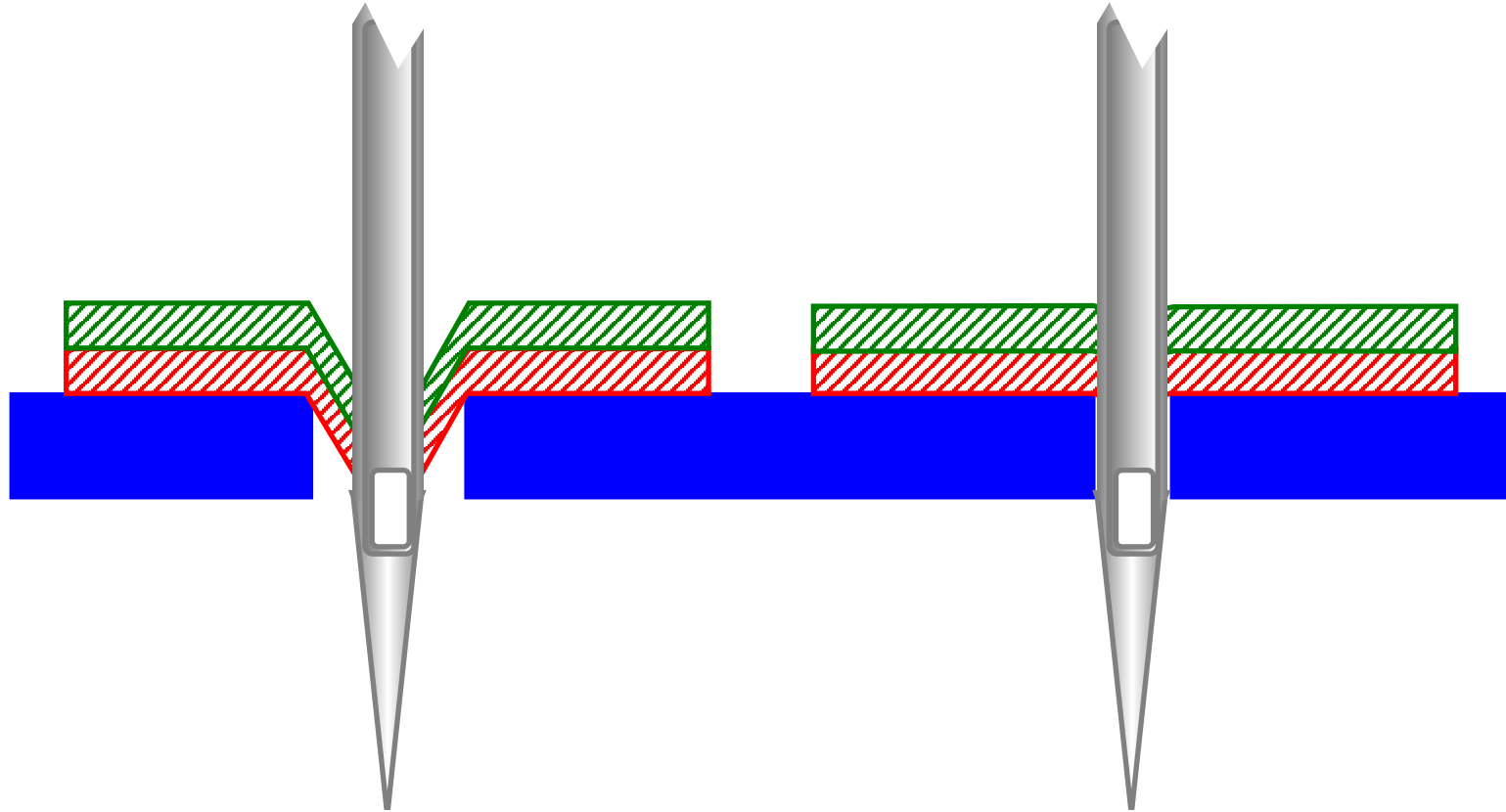


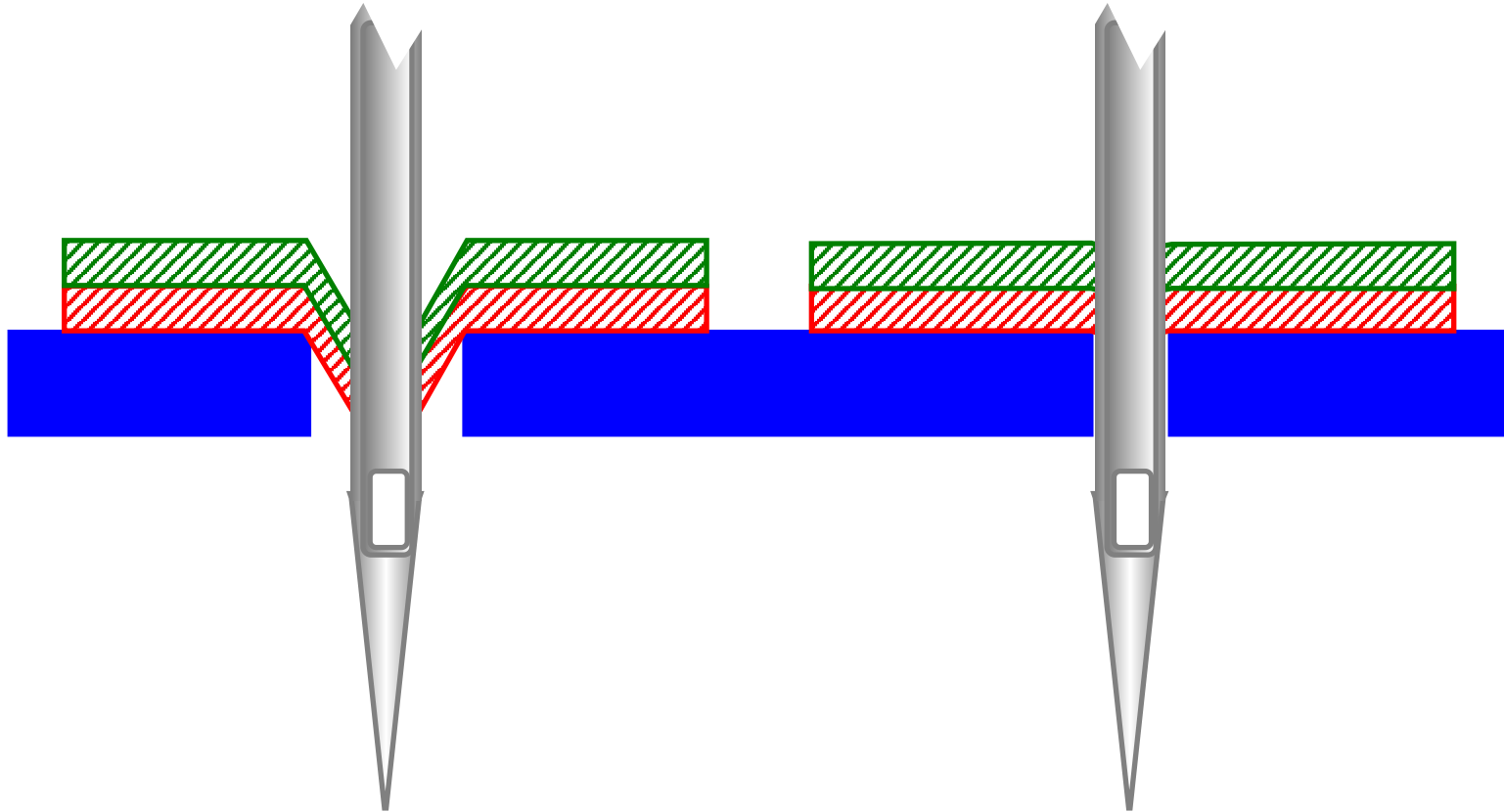


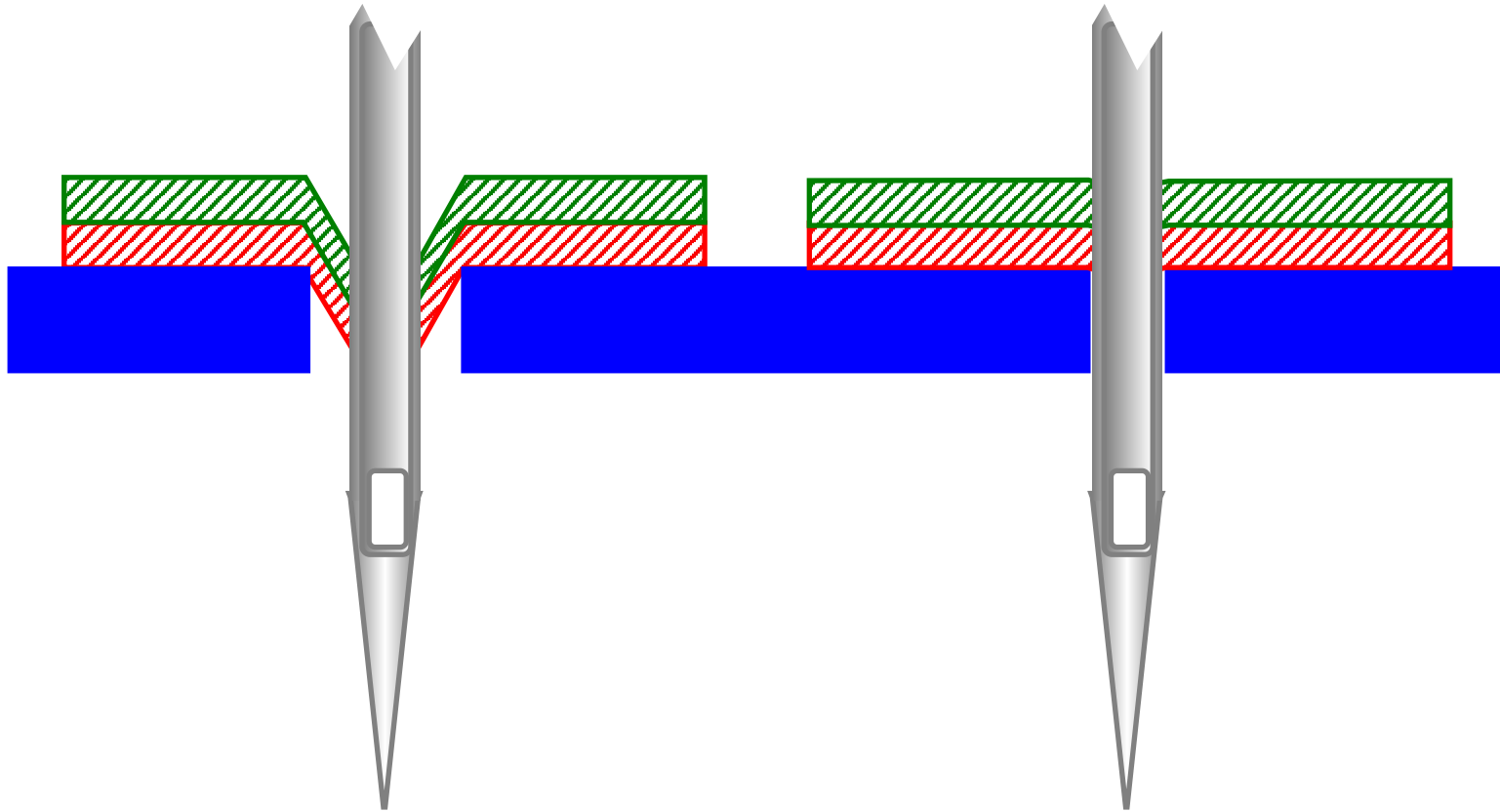


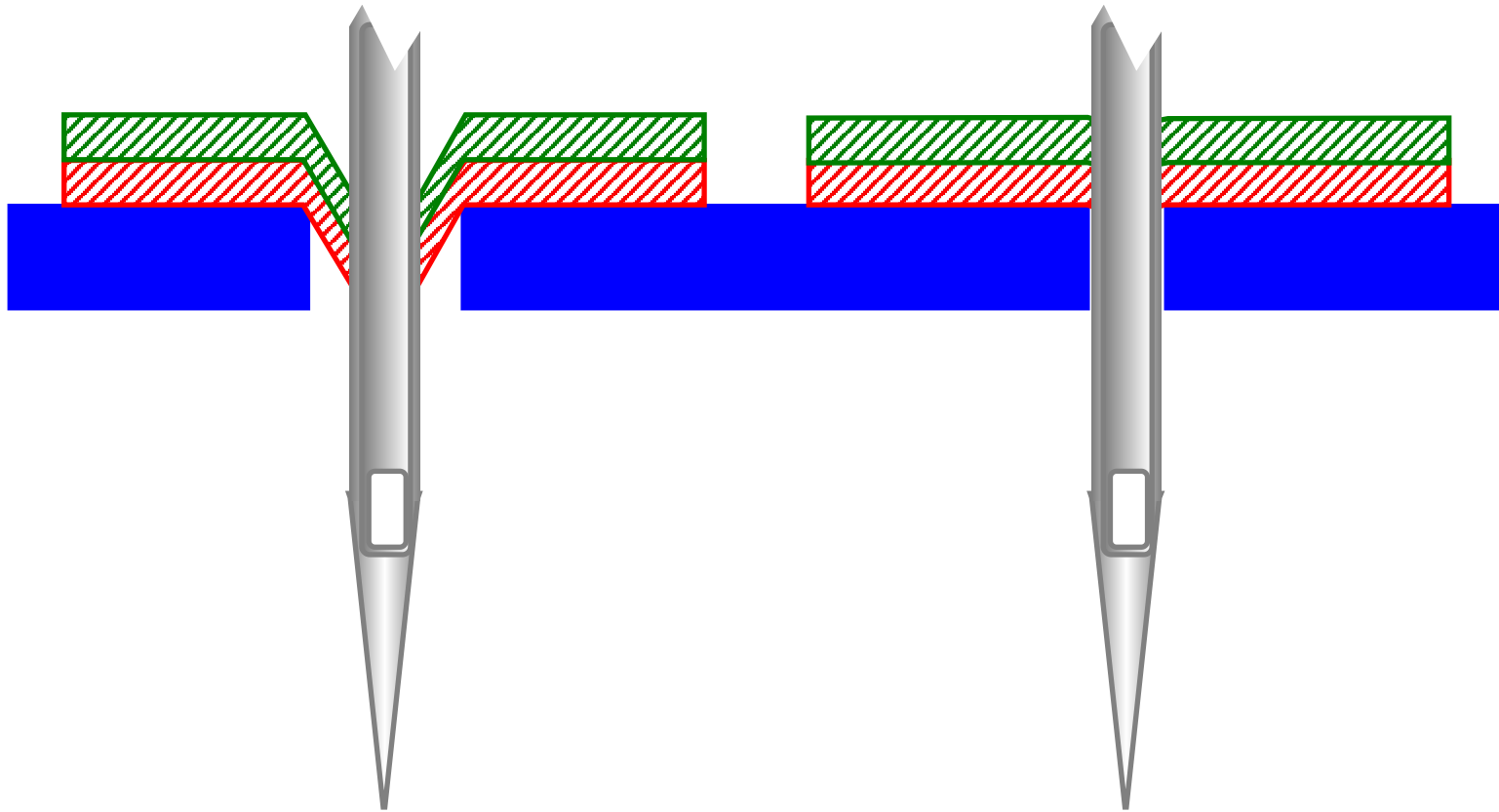


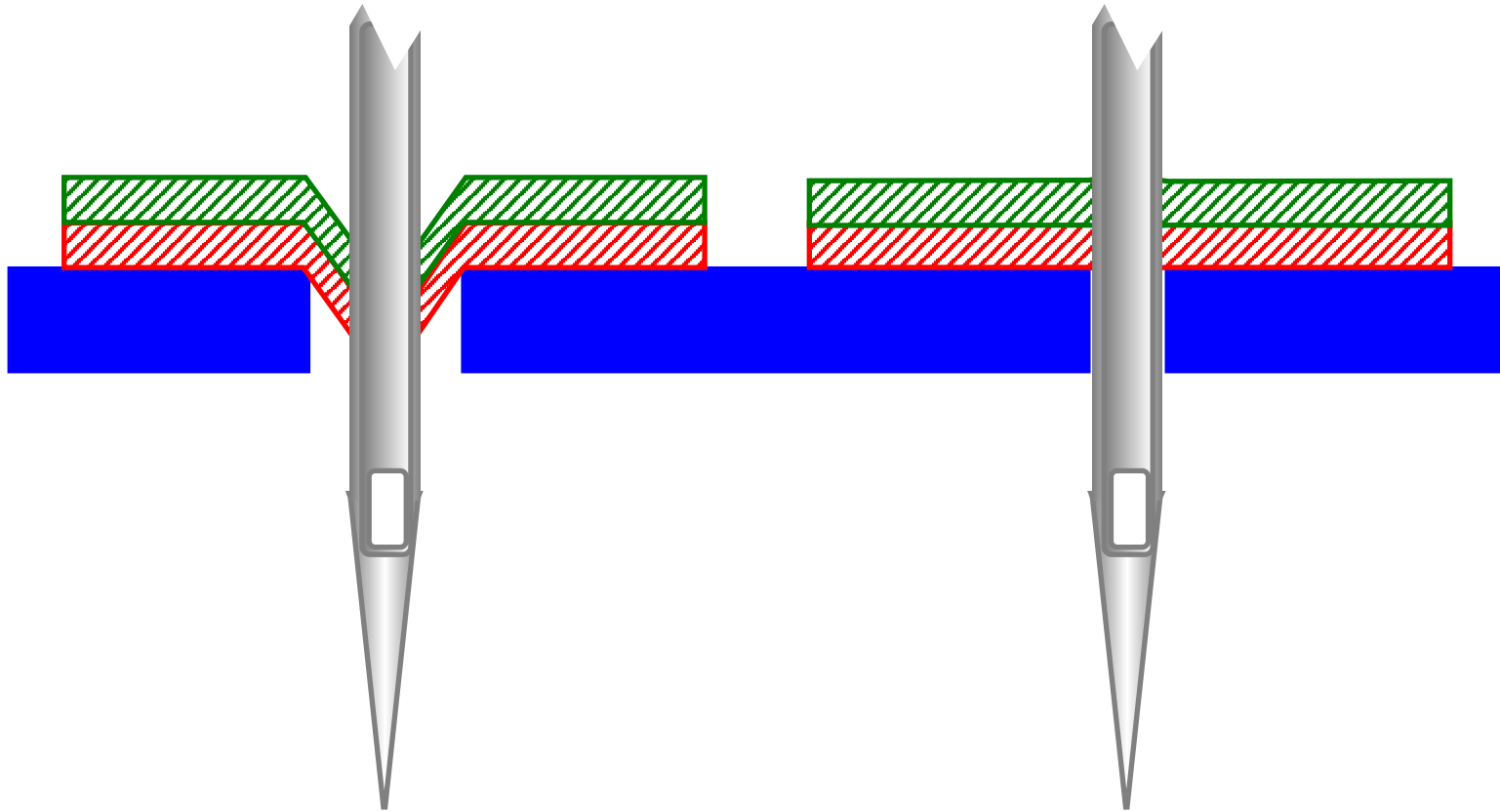


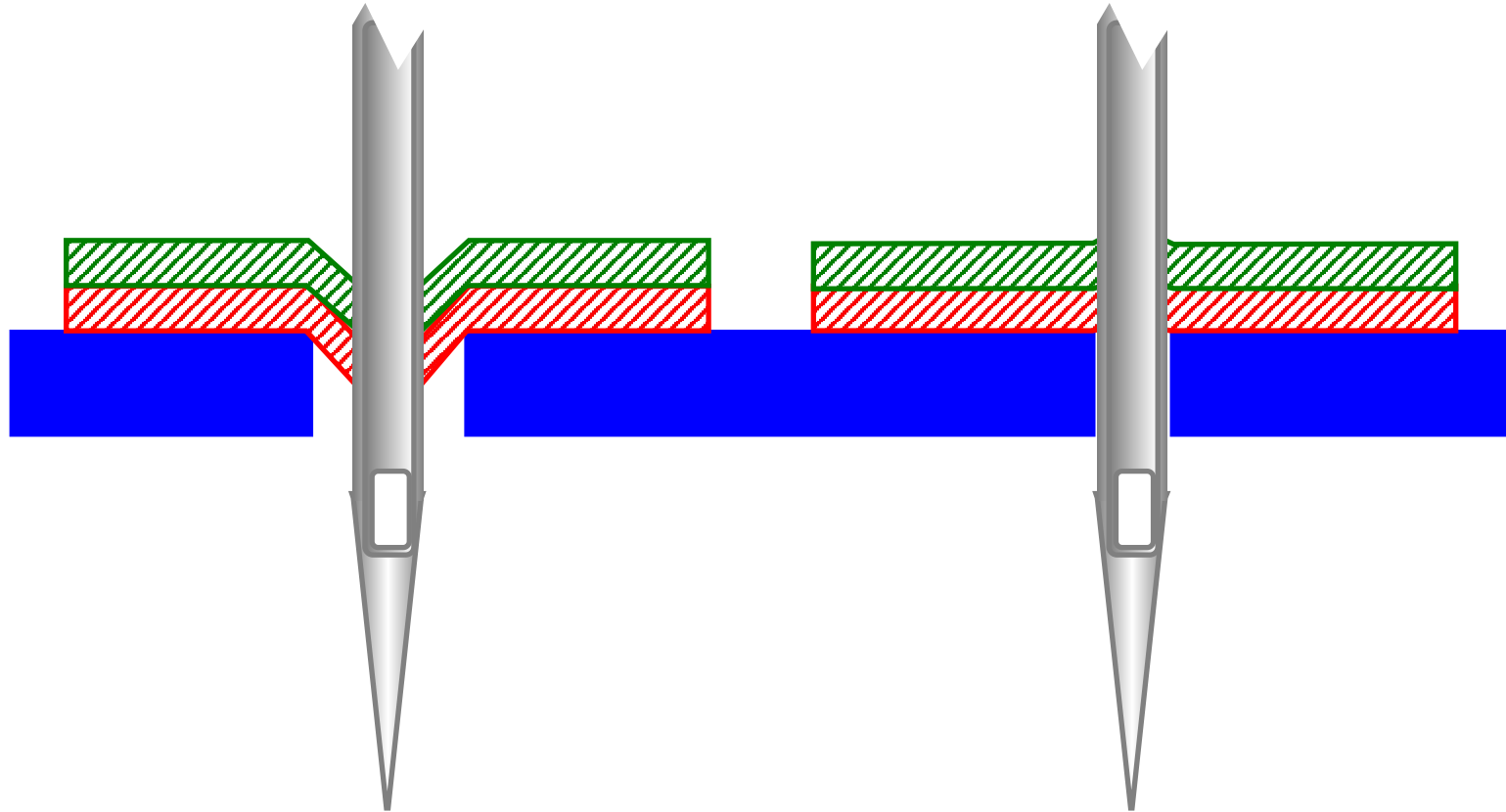


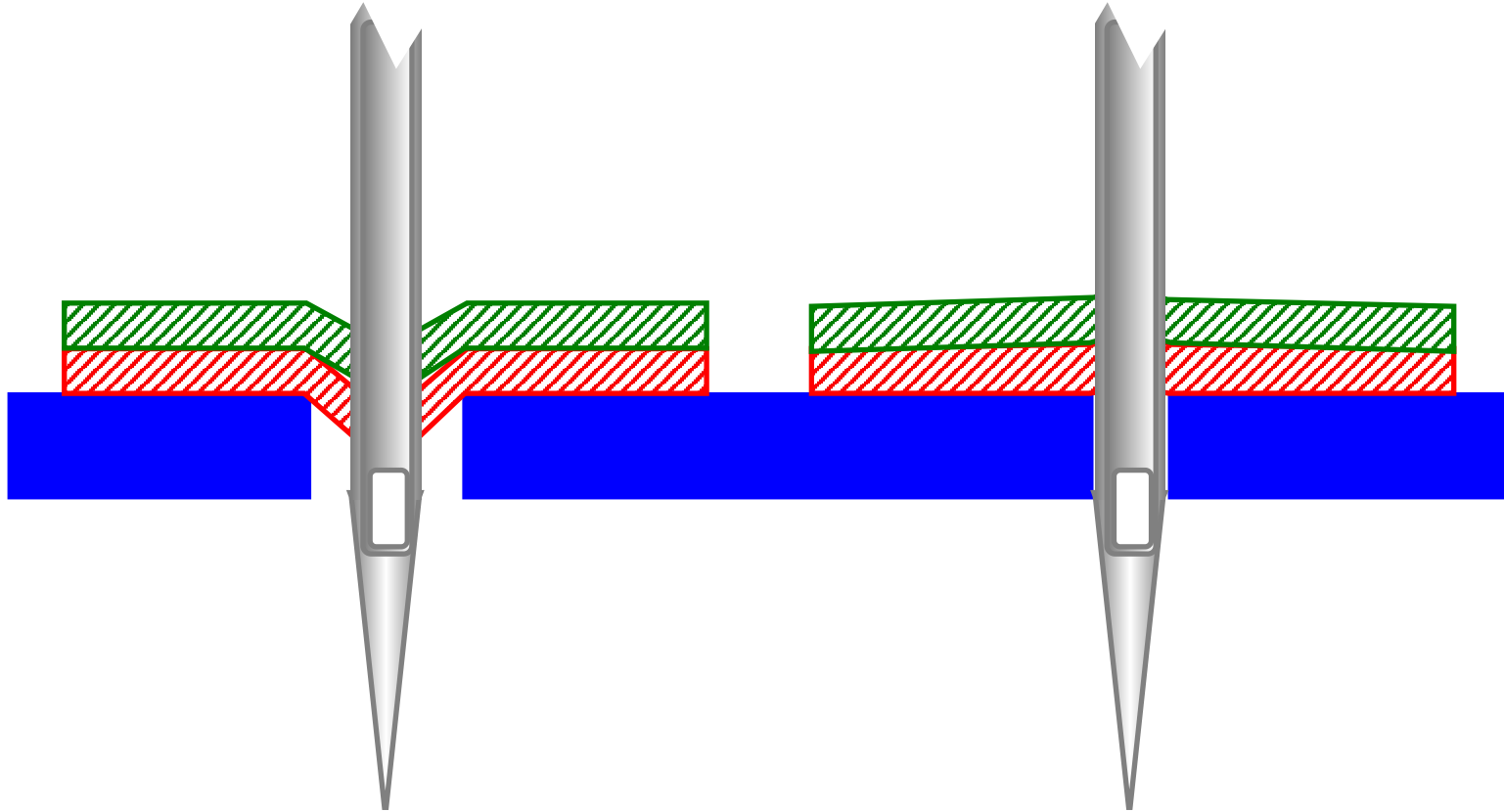


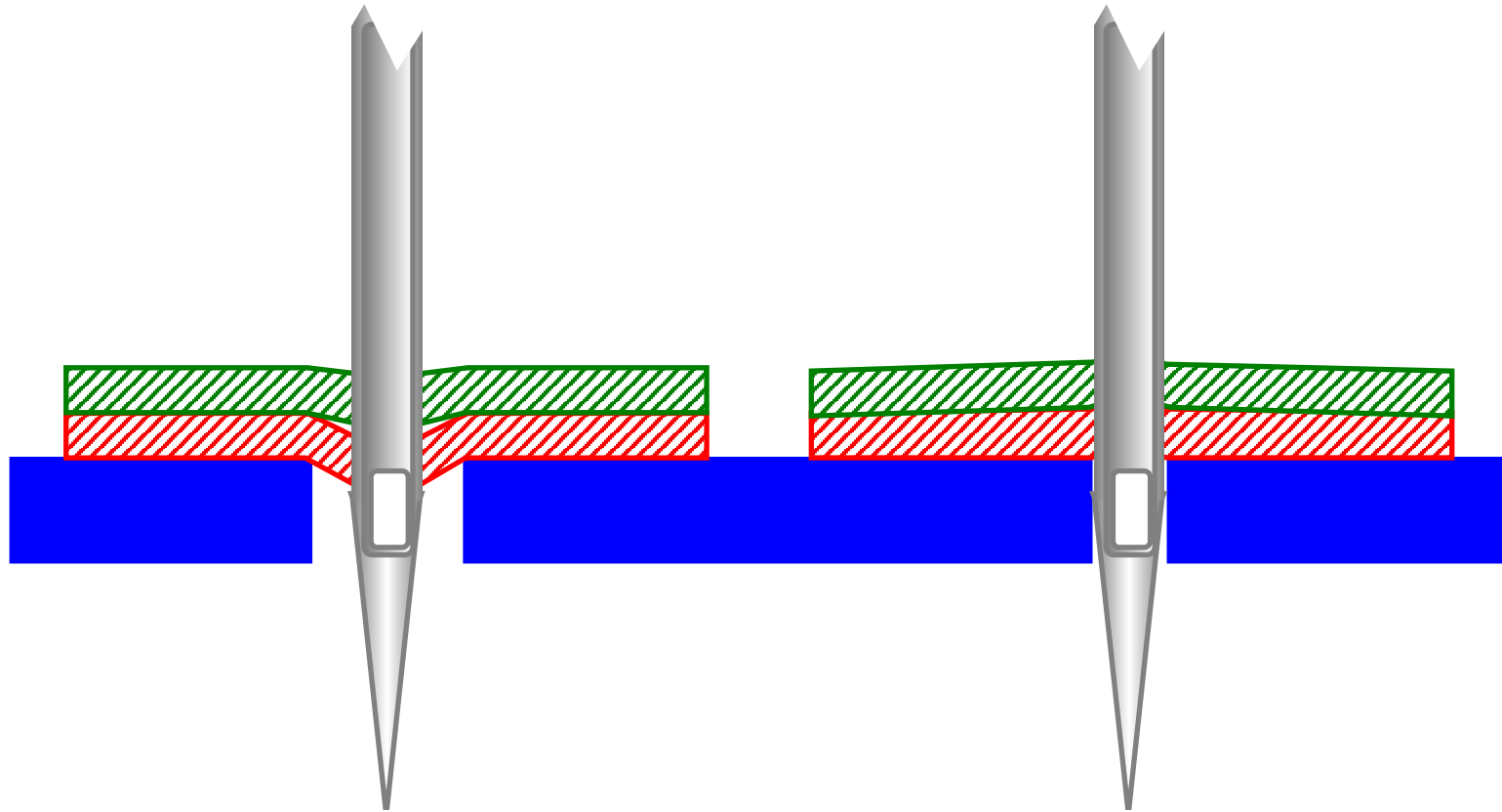


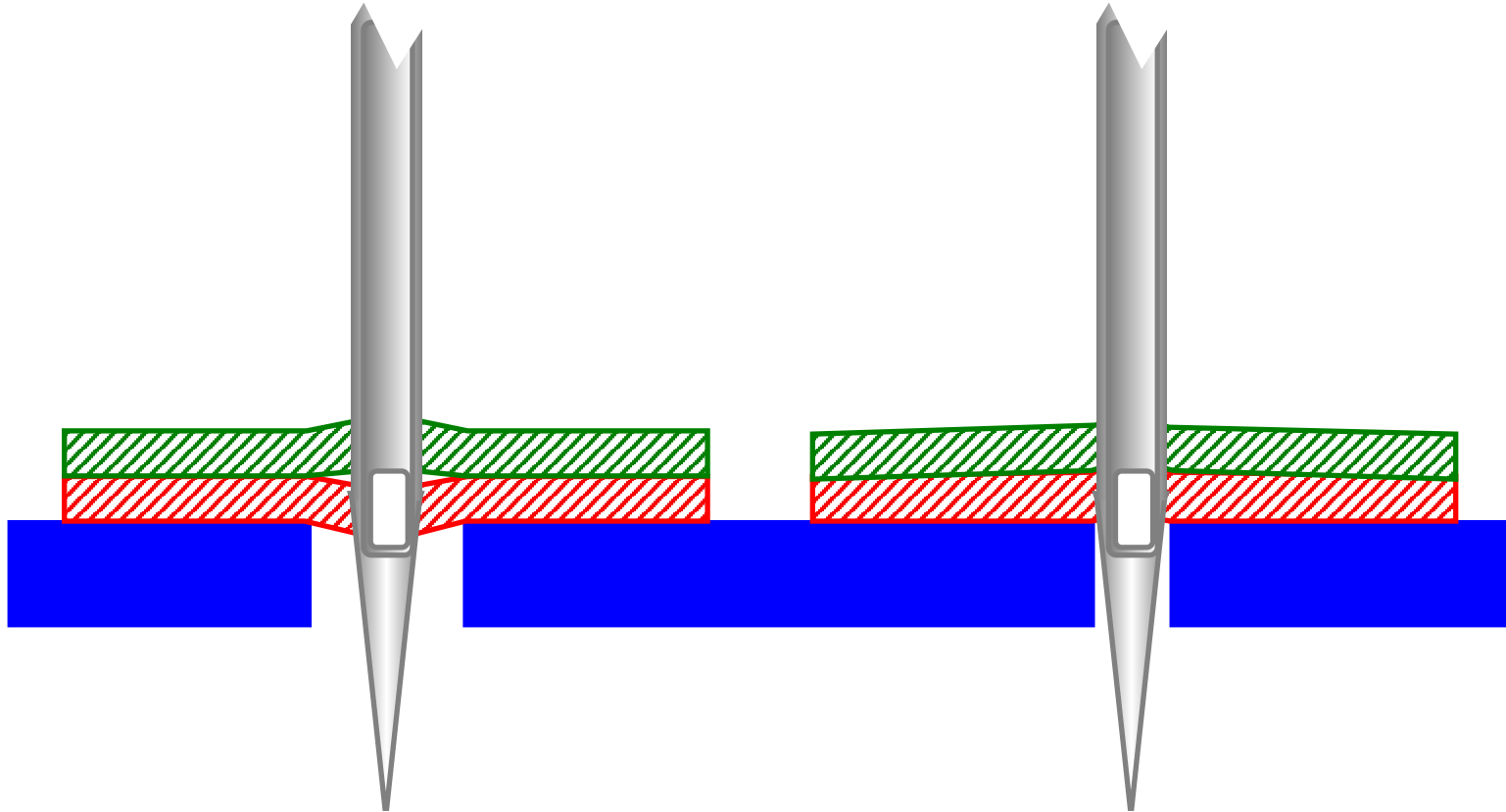


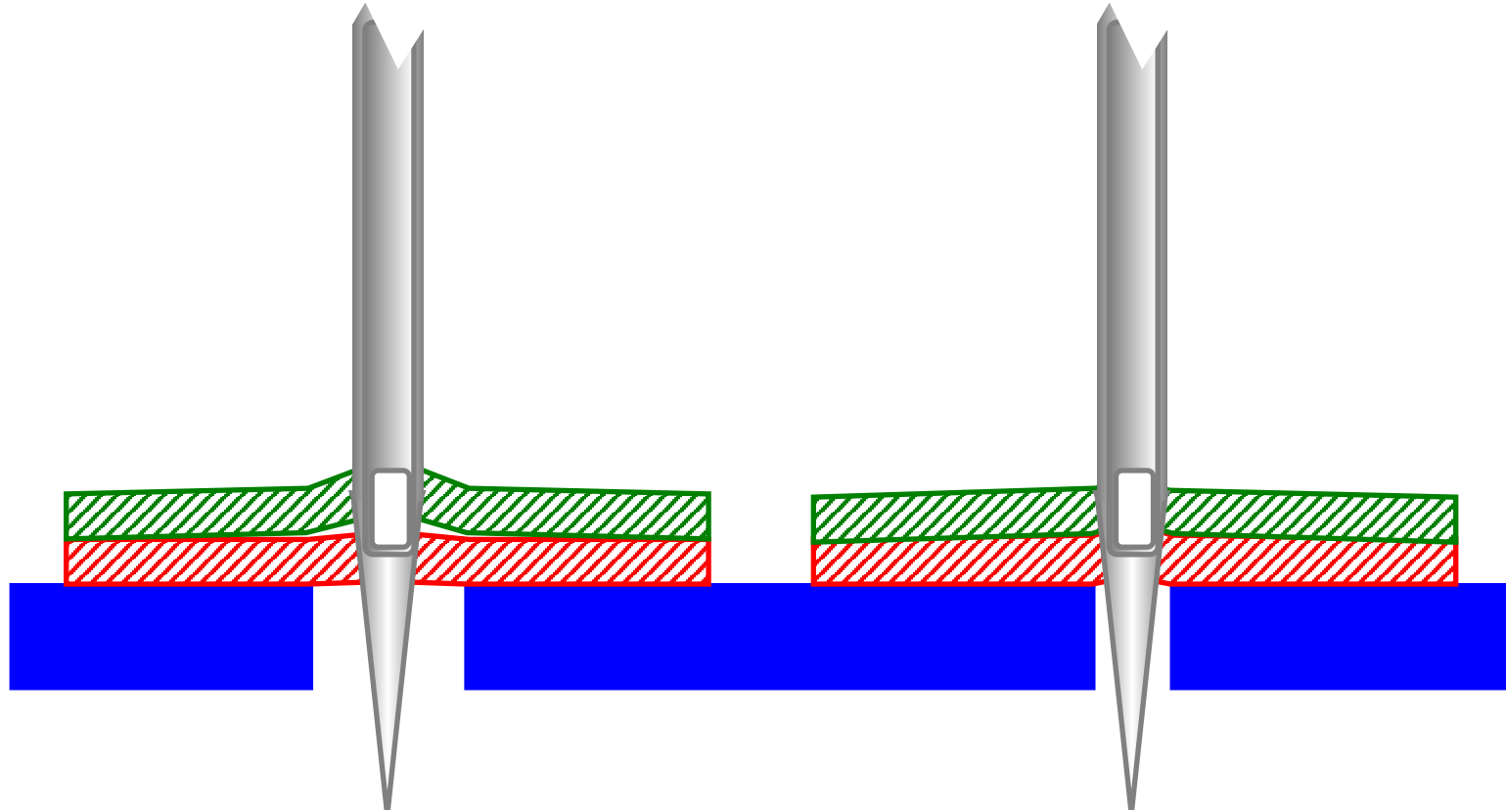


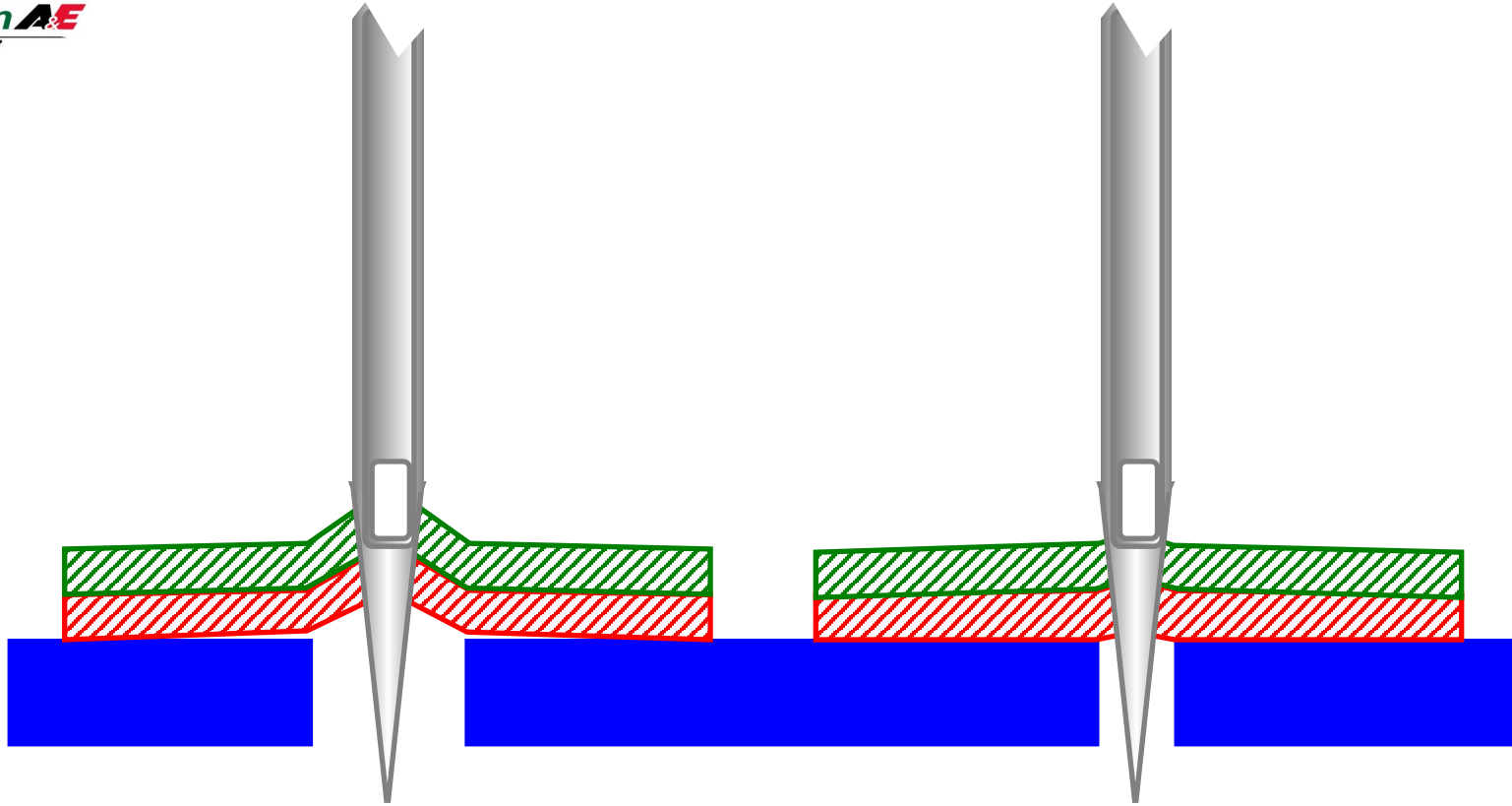


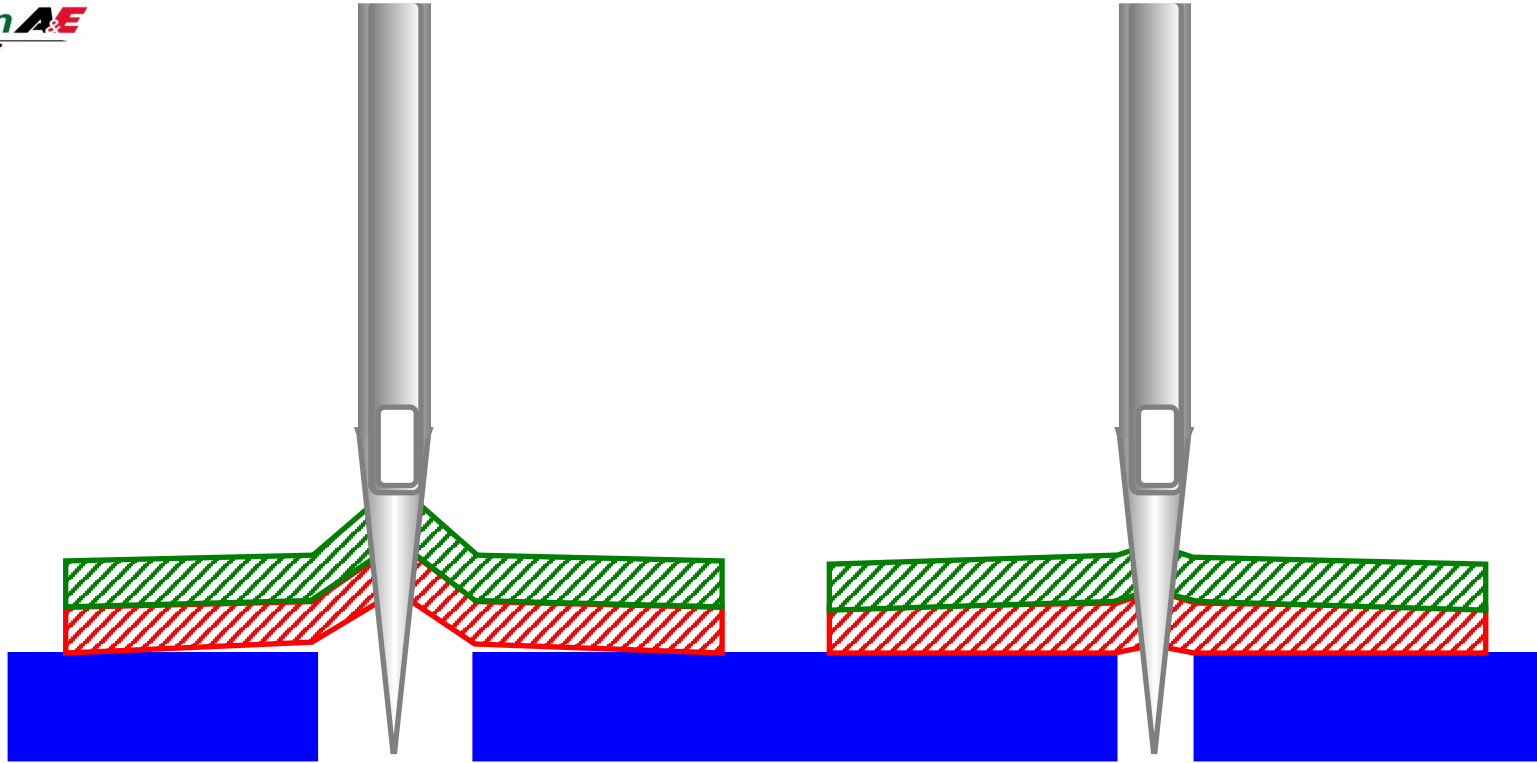


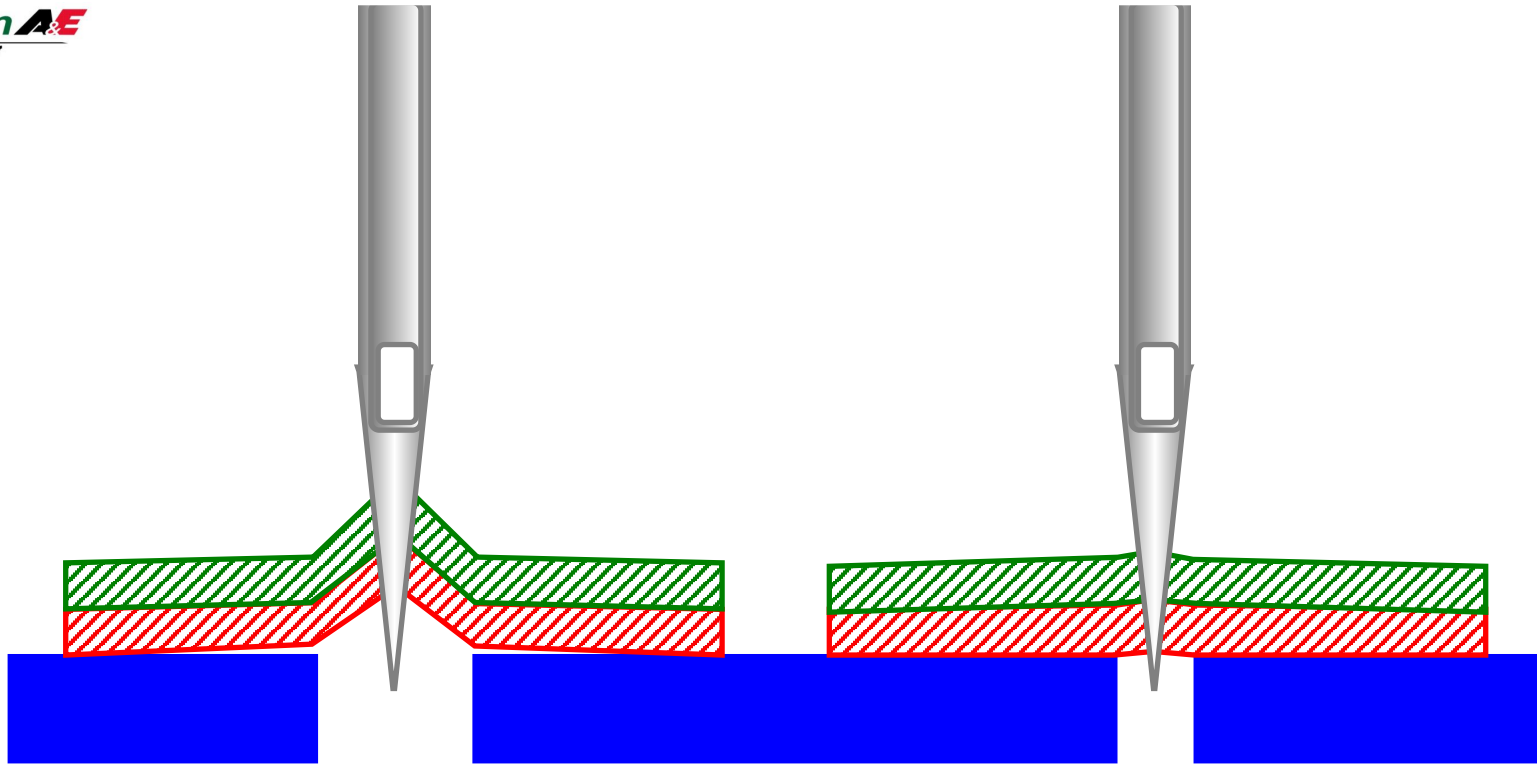


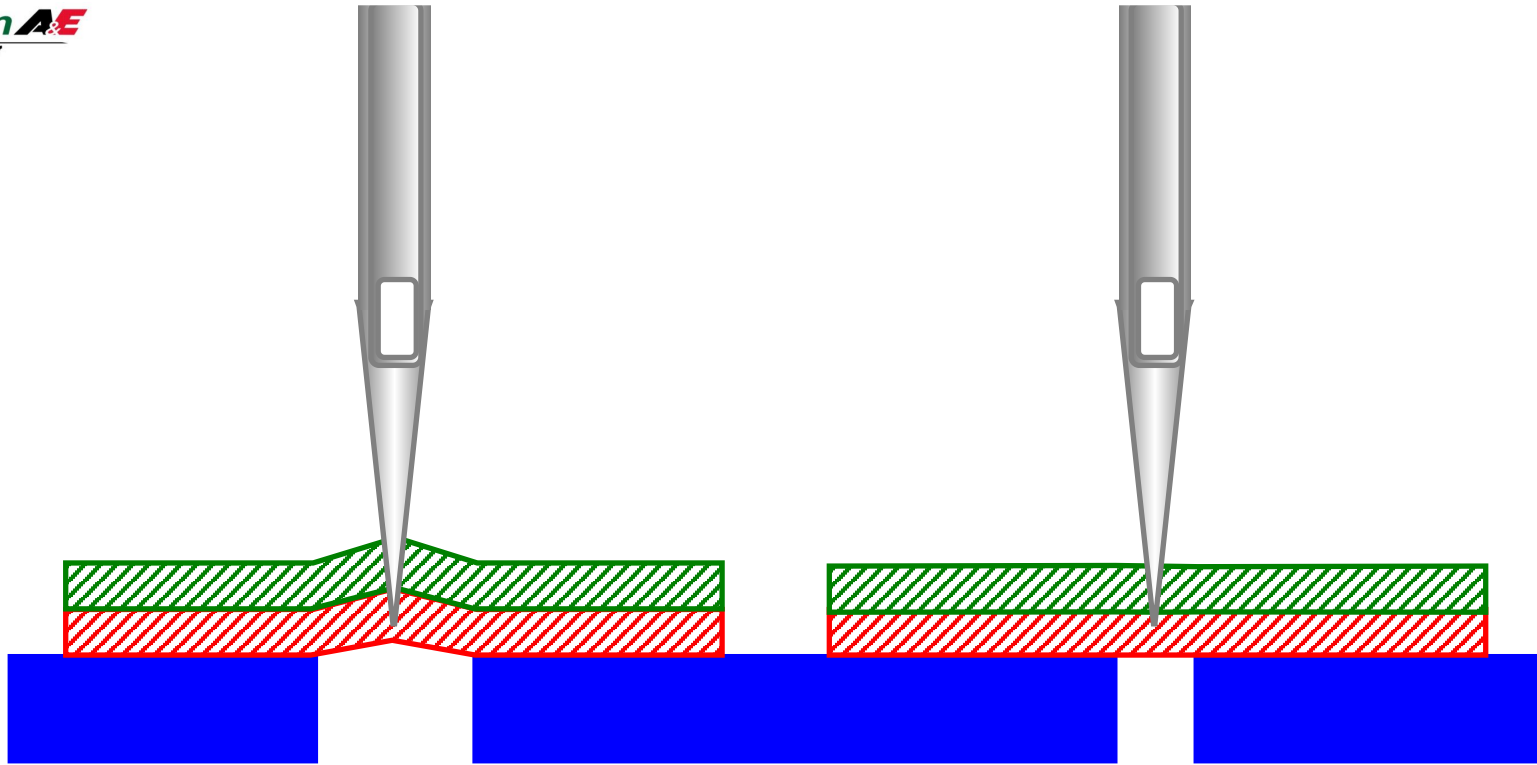








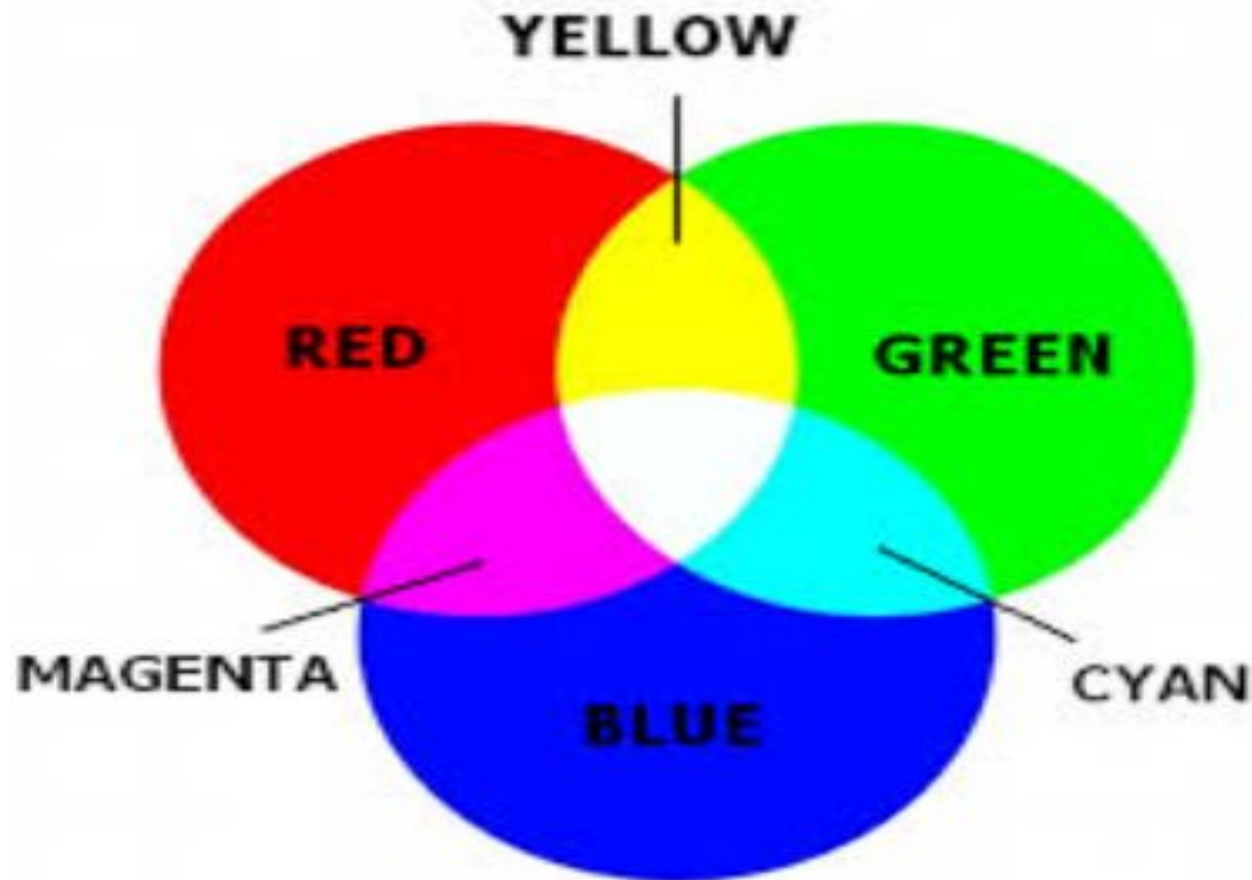




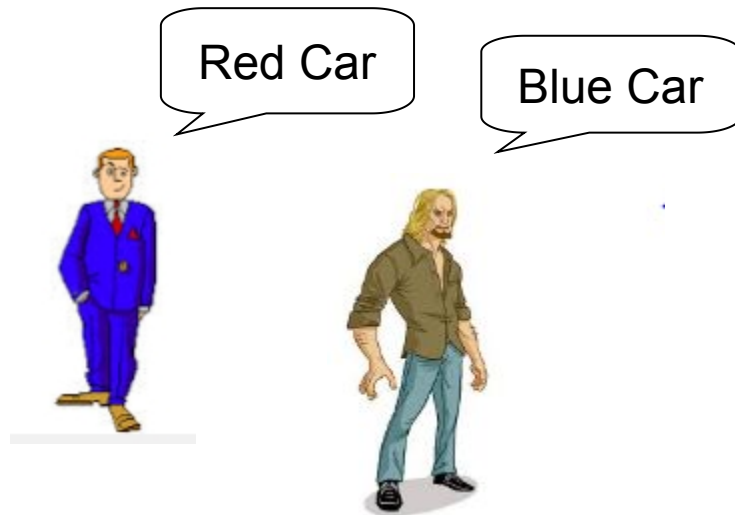
Understanding Colour

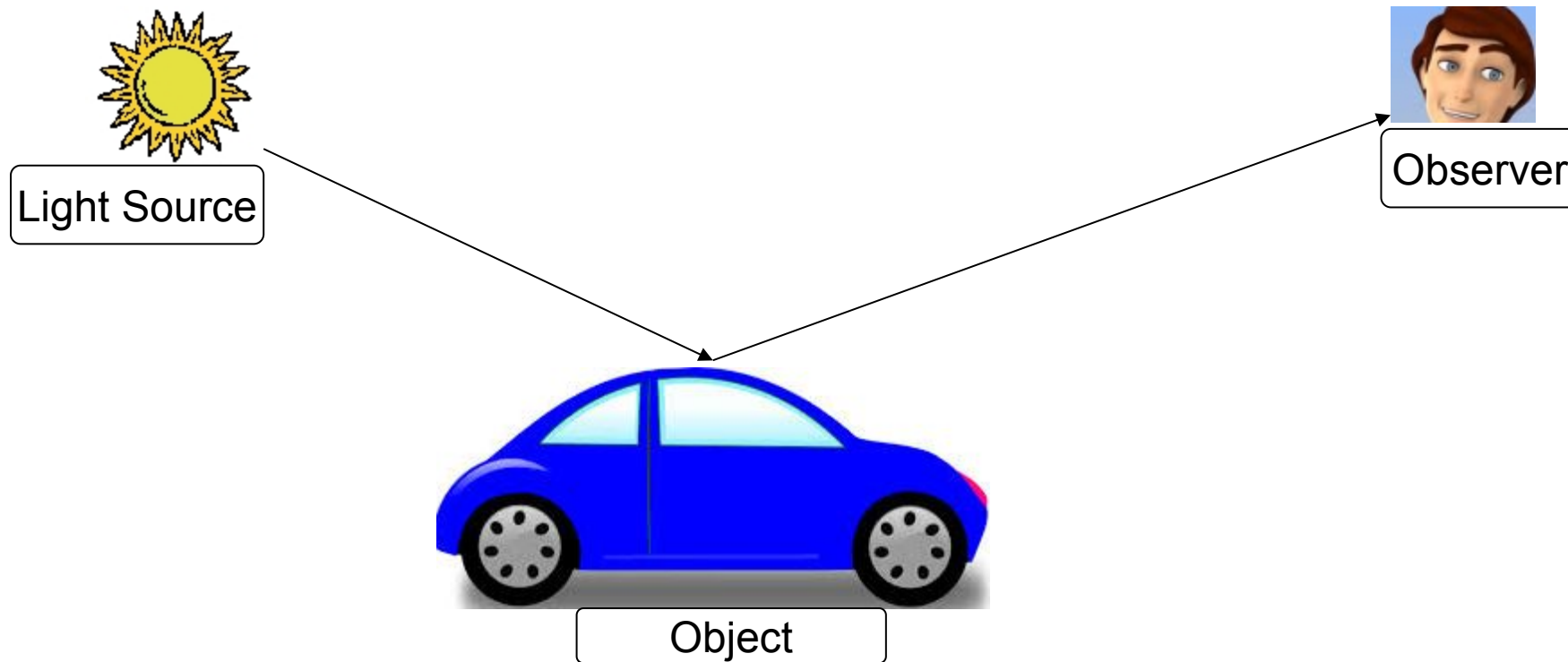


Colour is an attribute of visual perception by which the surface of an object is described as being white, black, red or green etc.



- ❖ Colour is a sensation and as such only exists inside the brain.
- ❖ Although we believe that we all have similar perception of colour we
- ❖ do not know that this is true.

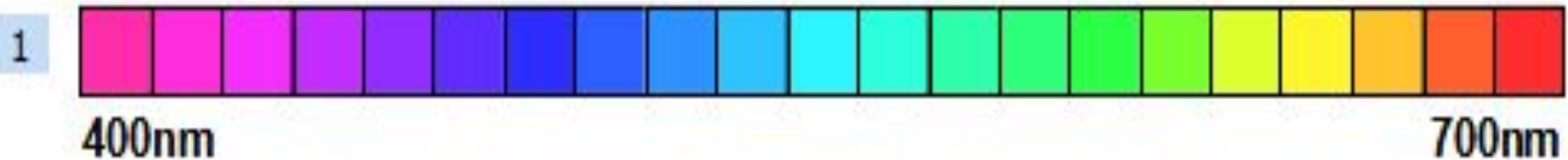




- ❖ Terms used to describe colour
- ❖ Colour appearance is not only affected by how red, blue or yellow a shade may be and there are three common terms which describe colour difference.
- ❖ Hue – the term by which a surface is judged similar to the colours red, orange, green, blue, etc. It is the attribute by which the eye distinguishes spectral colours.
- ❖ Chroma – the richness or colourfulness (brightness) of a colour. Dyers use the terms bright and dull to signify the Chroma of a colour.
- ❖ Lightness – the amount of light that is reflected from the surface. Dyers use the terms full and thin to signify the lightness of a colour.

Terms used to describe colour

Same Lightness, Same Chroma, Different Hue



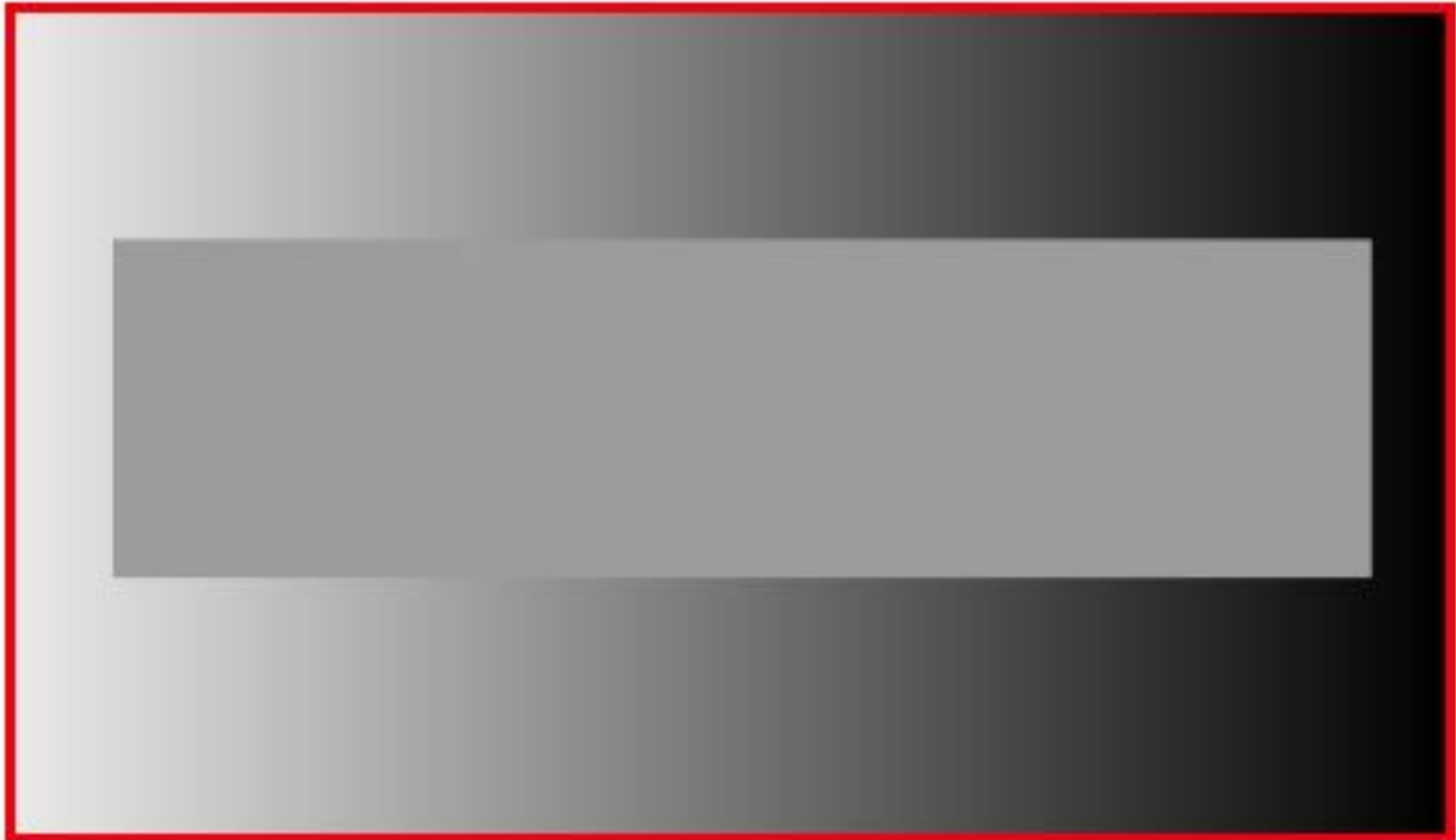
2 Same Hue, Same Lightness, Different Chroma



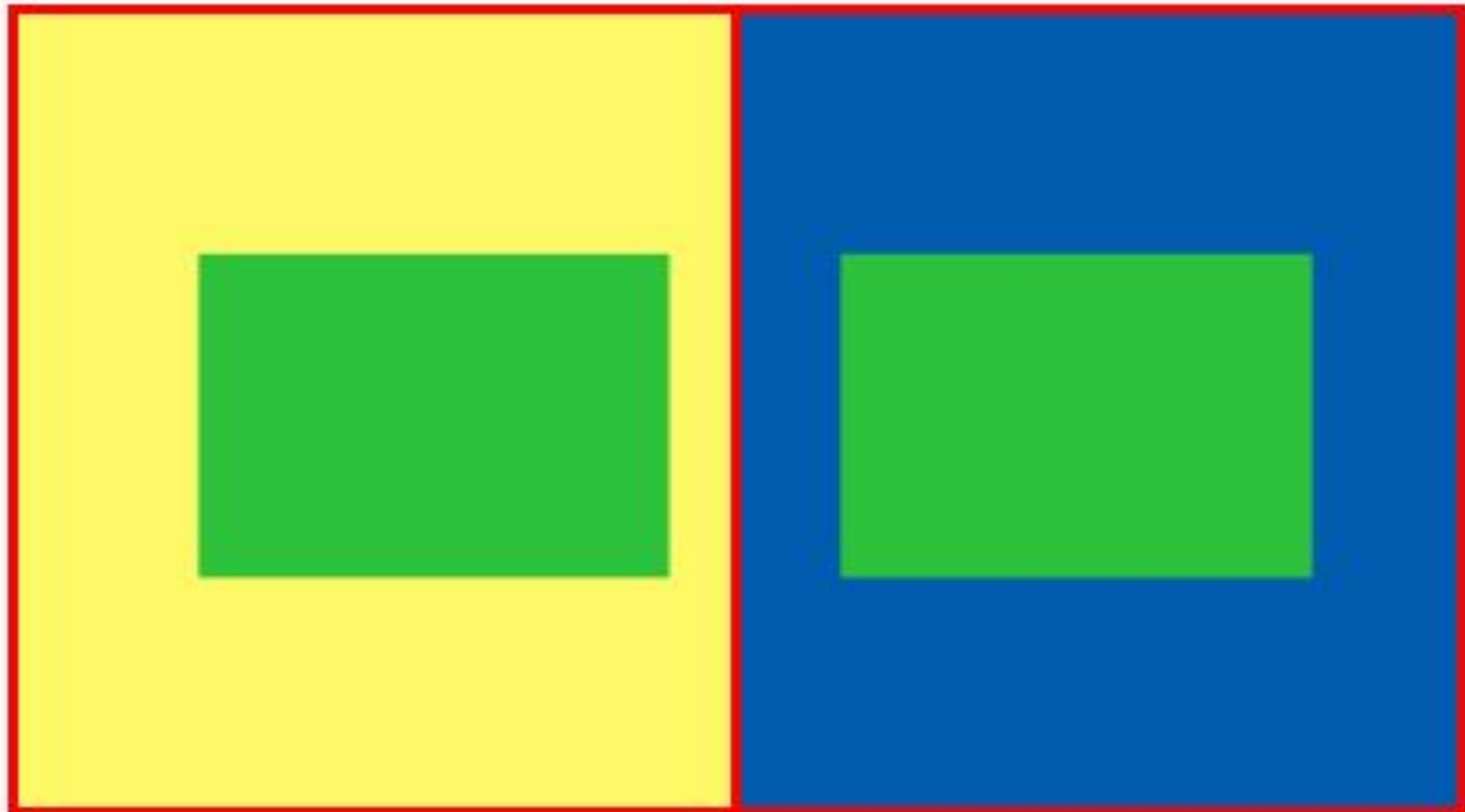
4 Same Chroma, Same Hue, Different Lightness



Background

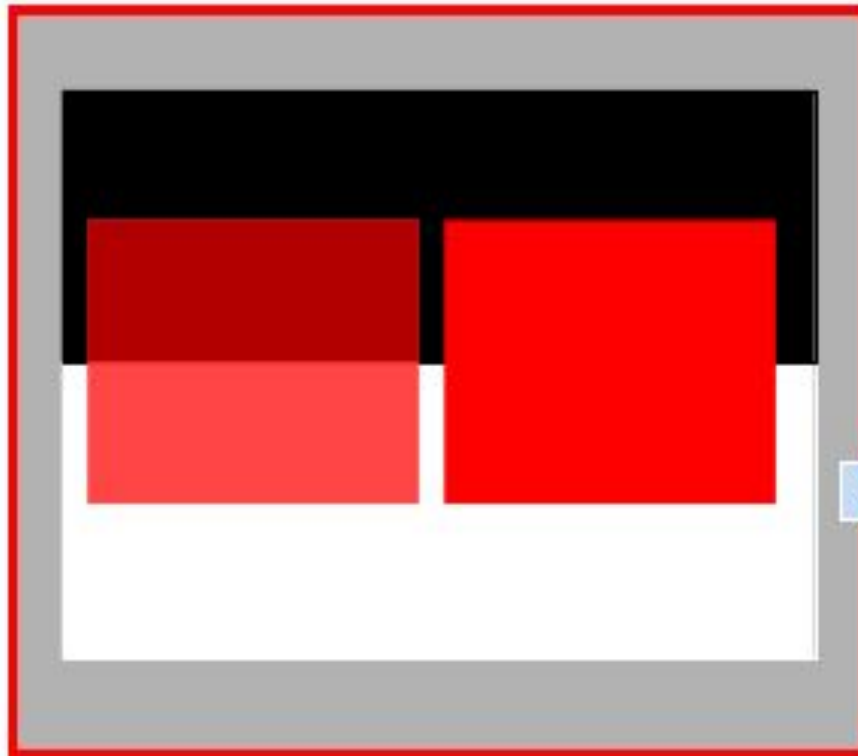


Background



Visual Assessment of Colour

Opacity

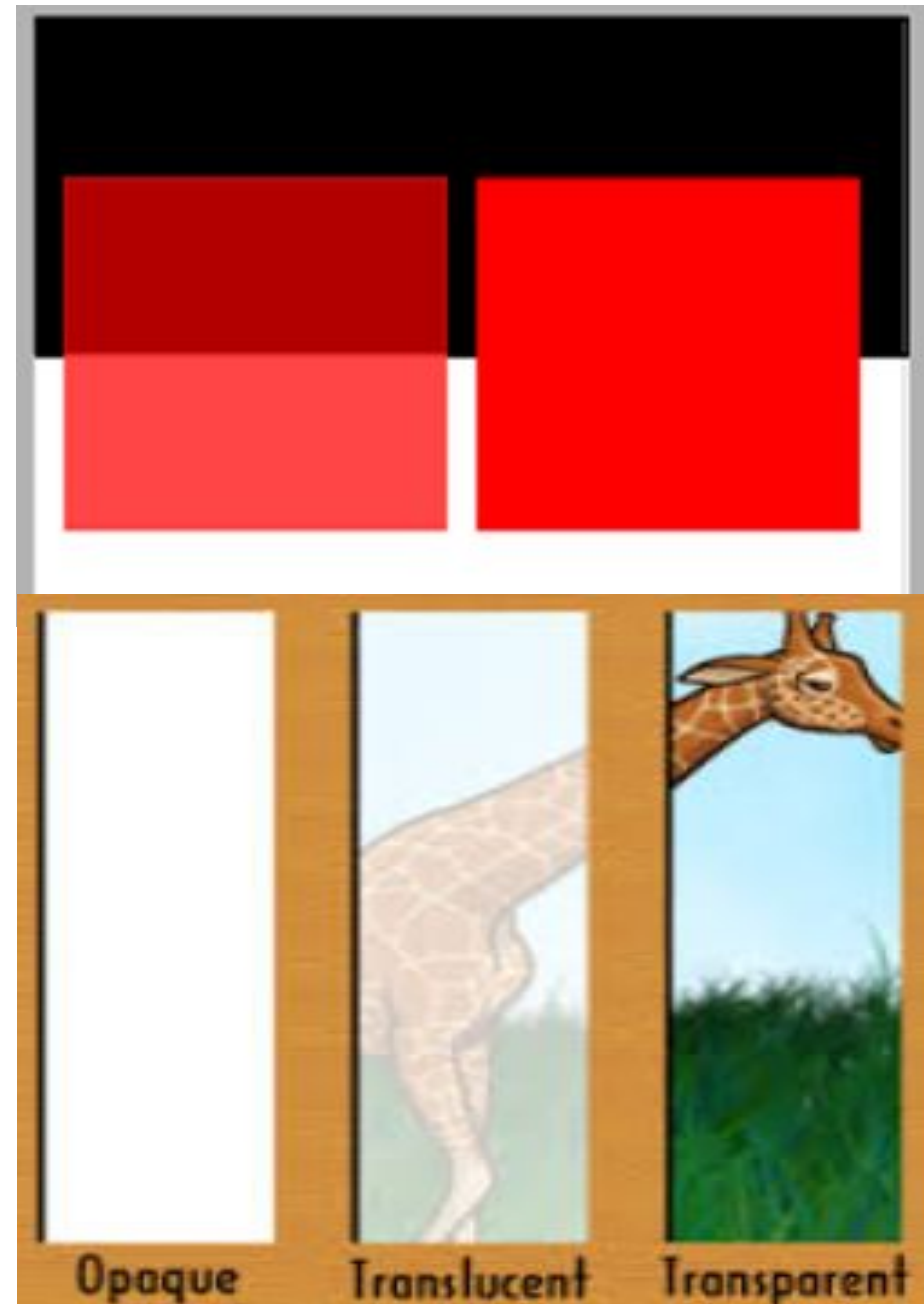


Opacity variation can have a major effect on appearance and measurement, especially with lightweight fabrics in pale shades

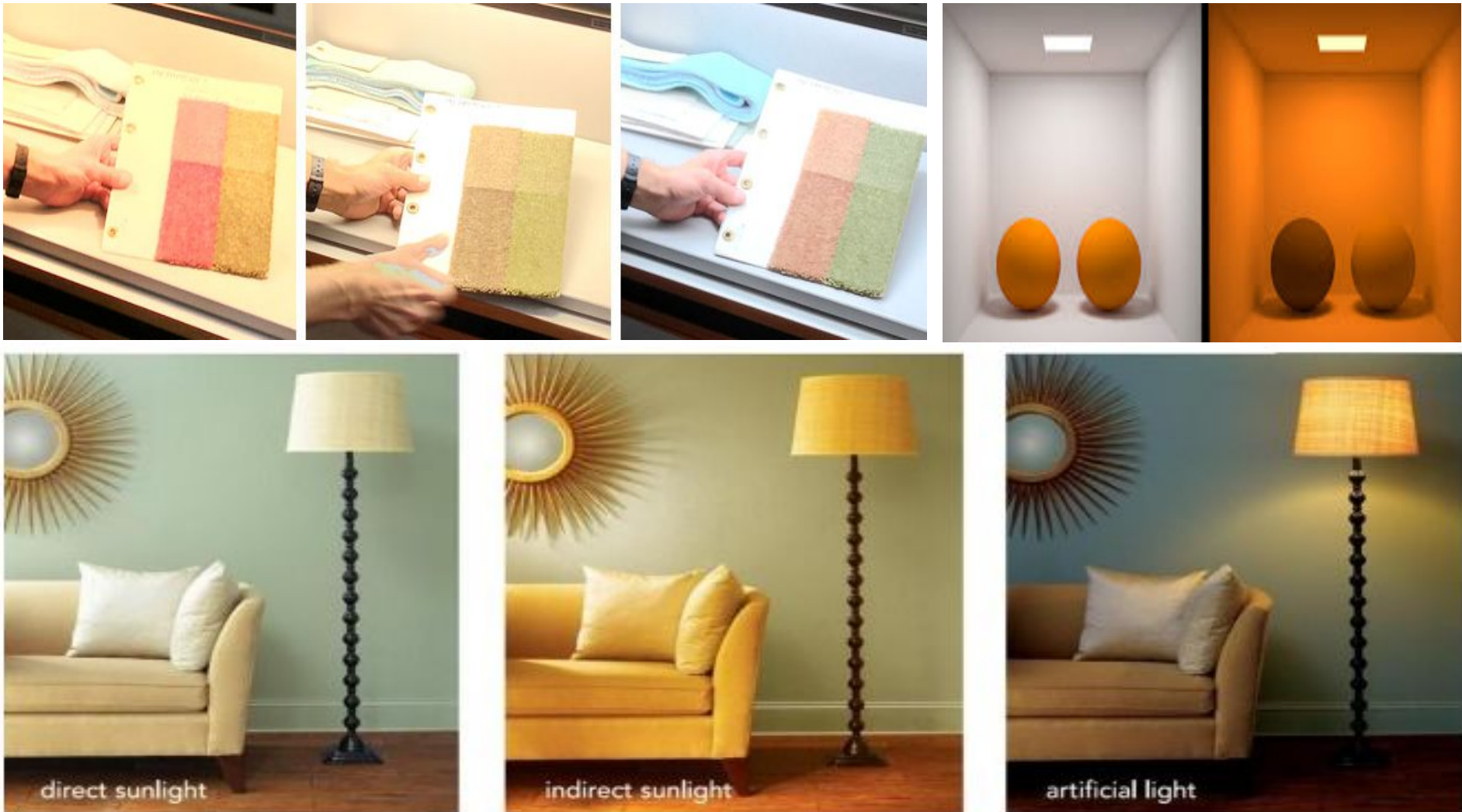
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Ideally all fabrics should be folded until they appear opaque

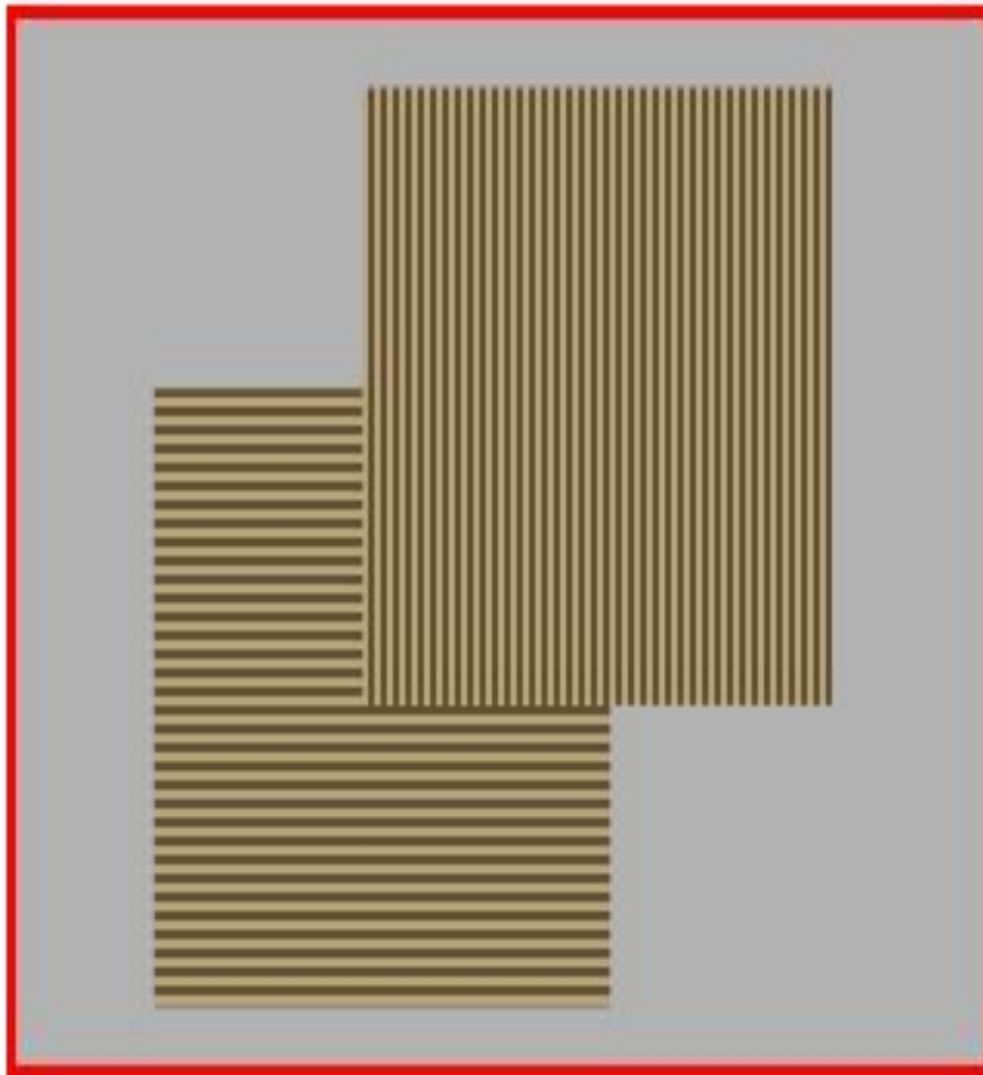
- Opacity variation can have a major effect on appearance and measurement of colour.
- This majorly happens with light weight fabrics.
- ❖ Ideally we should fold the fabric till it is opaque for shade matching and measurement.



Metamerism is the phenomenon wherein two colored samples will appear to be of the same shade under one light source but will appear to be different shades under a second source.



Orientation



- Changing the direction of some samples can change its colour appearance.

1

- It can also affect colour measurement.

2

- It is therefore important when comparing two samples they are viewed or measured in the same direction.

- ❖ Thread Recommendation
- ❖ Technical Presentation
- ❖ Thread consumption – ANECALC
- ❖ Productivity Analysis – ANETRACK
- ❖ Factory Trial for any seam related concerns.
- ❖ Ready stock of sample in 8 different count for speedy sampling.
- ❖ Colour communication system.



Thank you

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Please visit our website www.vardhmanthreads.com for more informatnion.