MSC 1 HYPERBODY

WEEK 04: NOV. 20TH - NOV. 25TH

BEWAR AHMED - NINO SCHOONEN

1 CONCEPT

CONCEPT

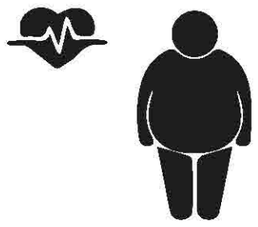
1a Overall parcours

CONCEPT

1a Target groups

Based on official Olympics distance sprints:

Summer Olympics and outdoor World Championships: the 100 metres, 200 metres, and 400 metres.



Weight loss

Calorie burn:

Many reps,
Long rest time,

Small distance

Interval

Explosive:

Fewer reps,
Low rest time,

Small distance

Condition

Endurance:

Many reps,
Low rest time,

Long dinstance

CONCEPT

1a Target groups

Based on official Olympics distance sprints:

Summer Olympics and outdoor World Championships: the 100 metres, 200 metres, and 400 metres.

List of program

Target: 10/12 people

Sitting

Laying down

Stretch excercises

Sit-ups

Pull-ups

Leg-raises

Back raise (reversed sit-up)

CONCEPT

1a Target groups

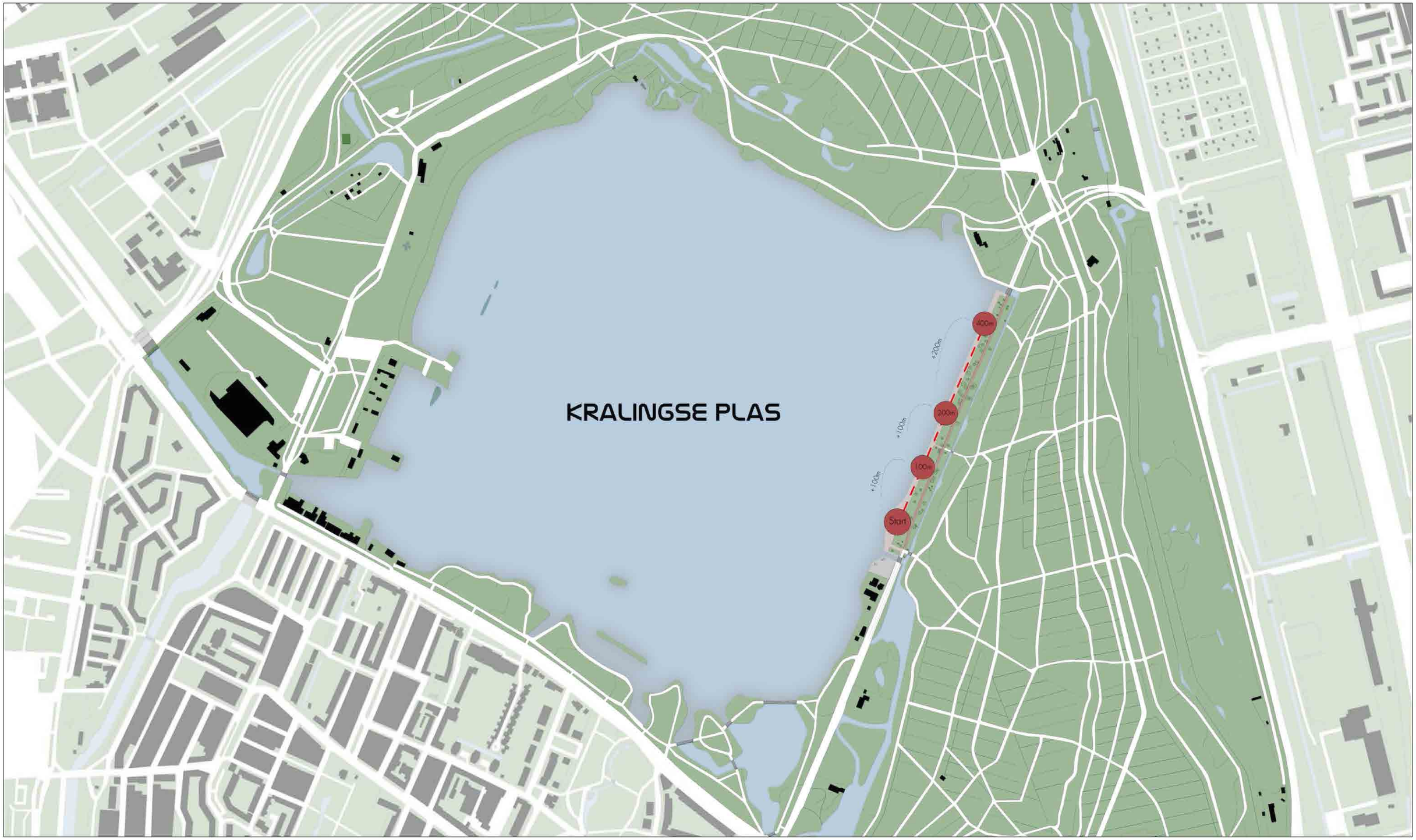
Targetgroup	Exercise	Start quantity	Added reps on next run
Weightloss	Stretching	x	x
	Sit-ups	5	2
Interval	Stretching	x	x
	Situps	15	3
	Legraise	15	3
Condition	Stretching	x	x
	Pullups	10	3
	Backraise	10	3
	Situps	10	3
	Legraise	10	3

CONCEPT

1a Defining parcours

Weight loss

Weigth loss track



CONCEPT

1a Defining parcours

Condition

Condition track

2 DESIGN FORMS

DESIGN

2a Design I

Sitting

Laying

- Weather proof,
- Soft: comfortable to sit on
- Durable
- Strong (vandalism-proof)

Stretching

- No need for soft/comfortable surface
- Avoid dirt from shoes

Sit-ups

- Breathing surface (as people sweat)
- Soft but strong surface

Pull-ups

- Bar should provide extra grip for hands

Leg-raises

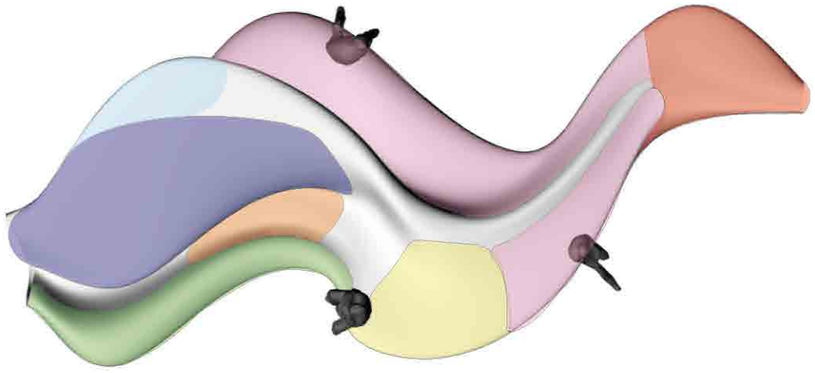
- Hands need grip support
- Surface you lay on needs to breathe
- Soft but strong surface

Back-raises

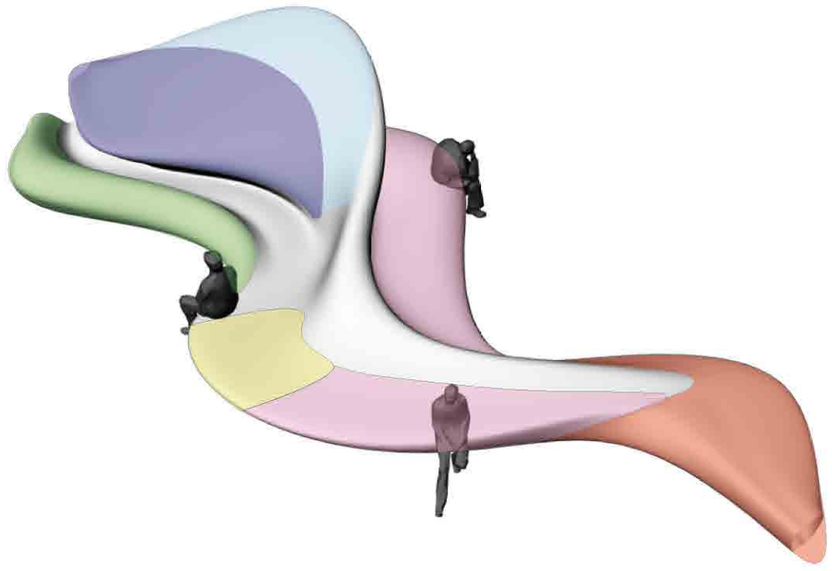
- Heels and knees area soft but strong
- Upper leg surface soft but strong

DESIGN

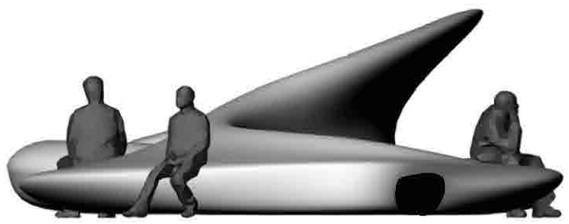
2a Design I



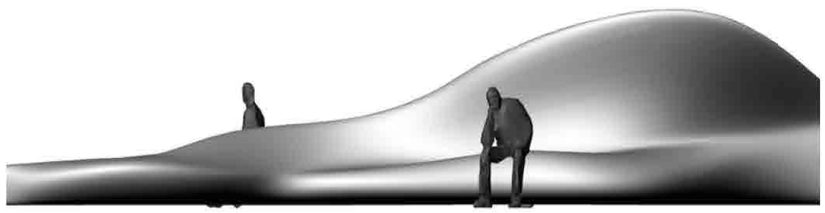
Plan view



Isometry



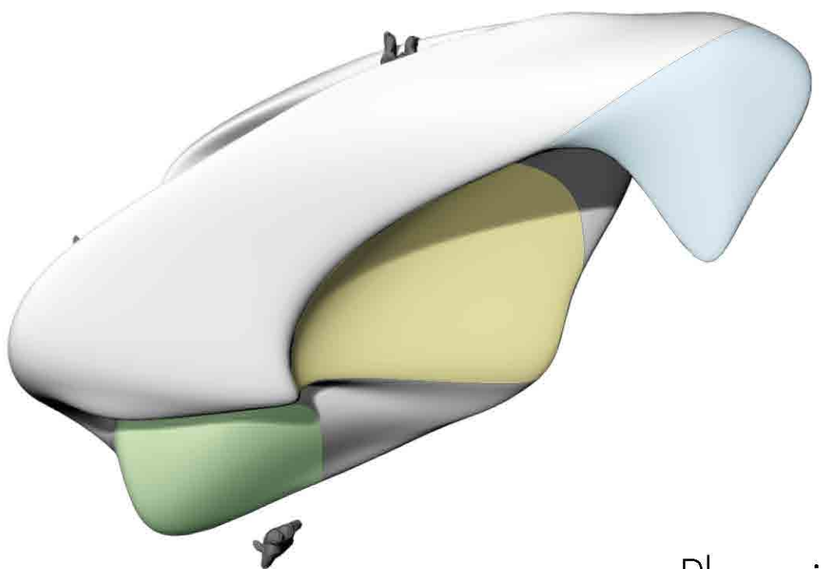
Front view



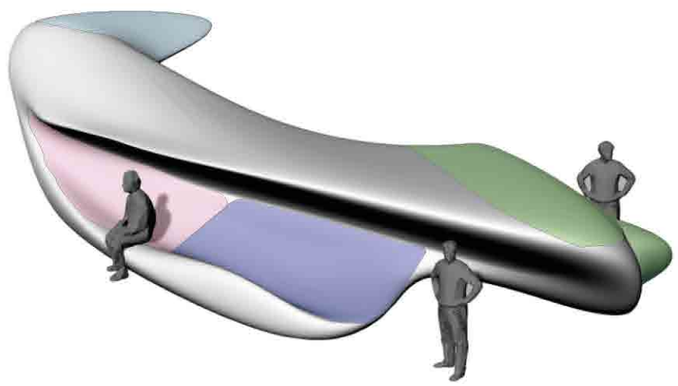
Side view

DESIGN

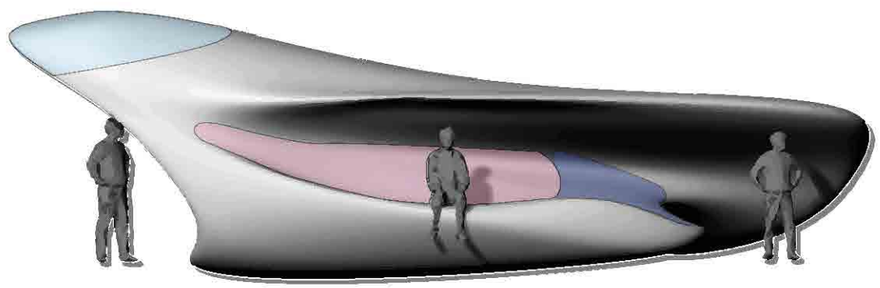
2a Design II



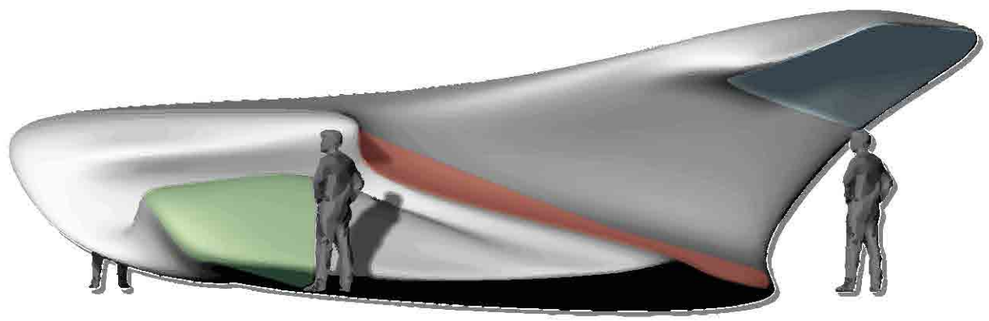
Plan view



Perspective I



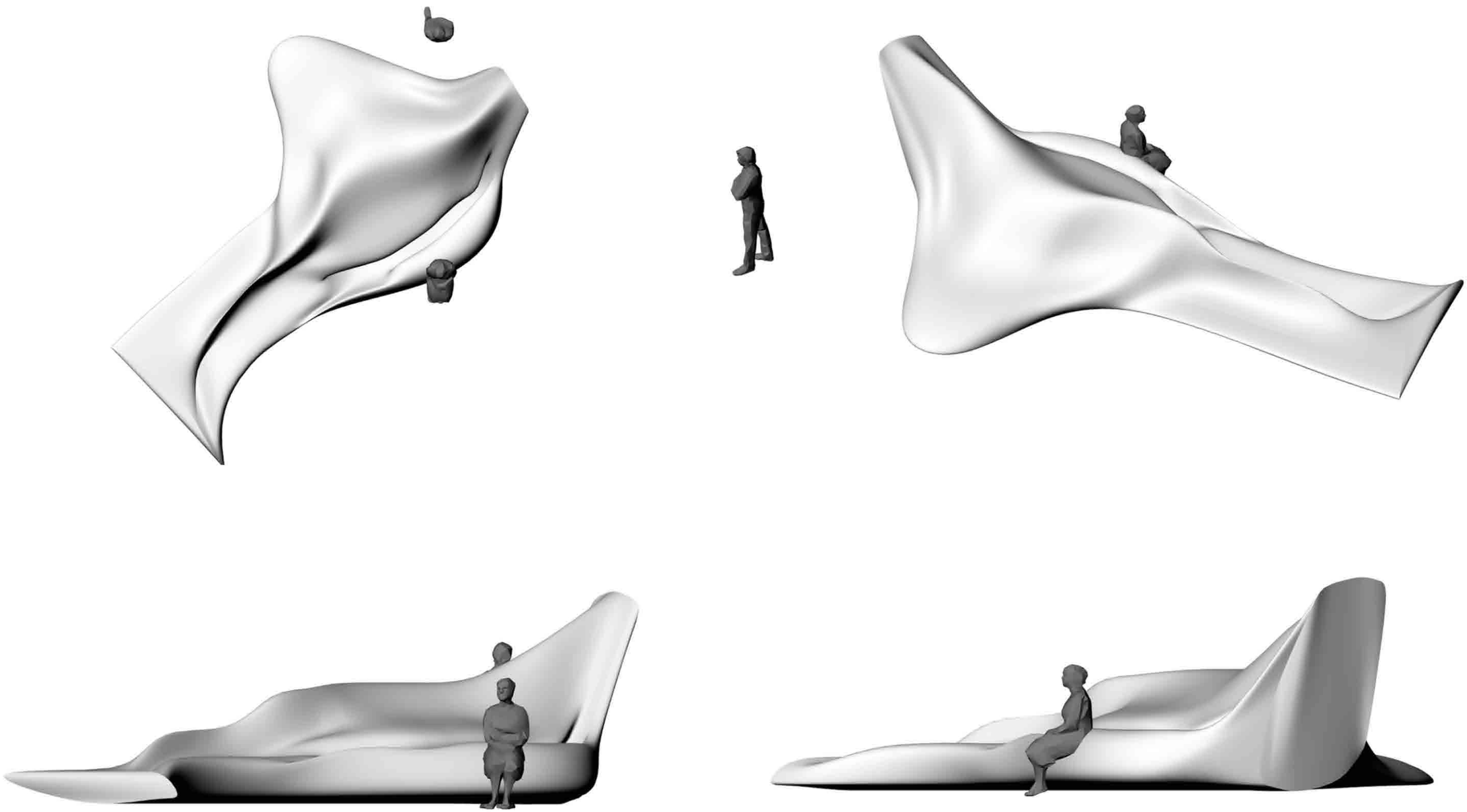
Front



Side

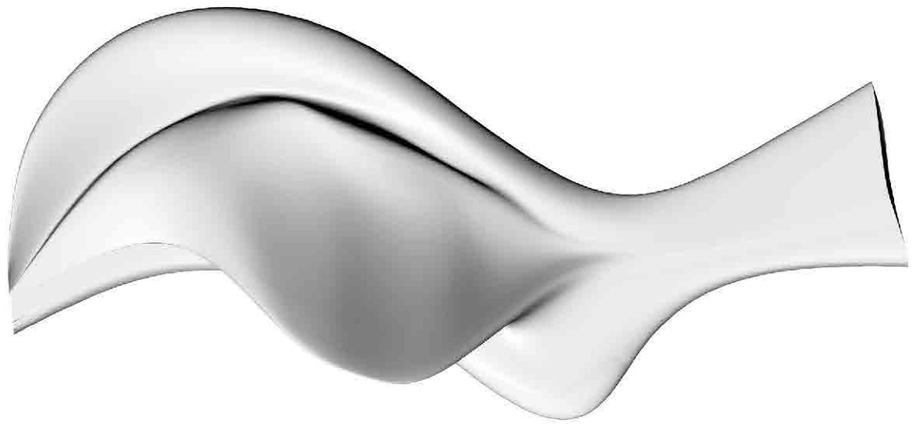
DESIGN

2a Design III

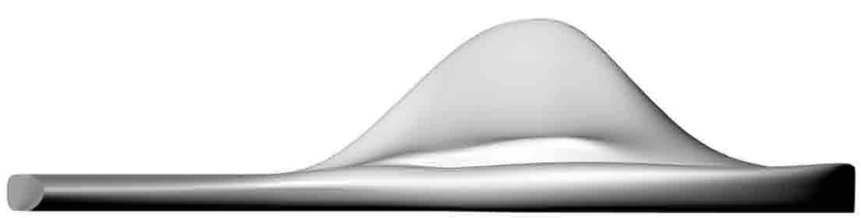


DESIGN

2a Design IV

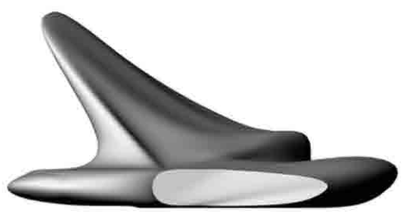


Plan view



Side

Back



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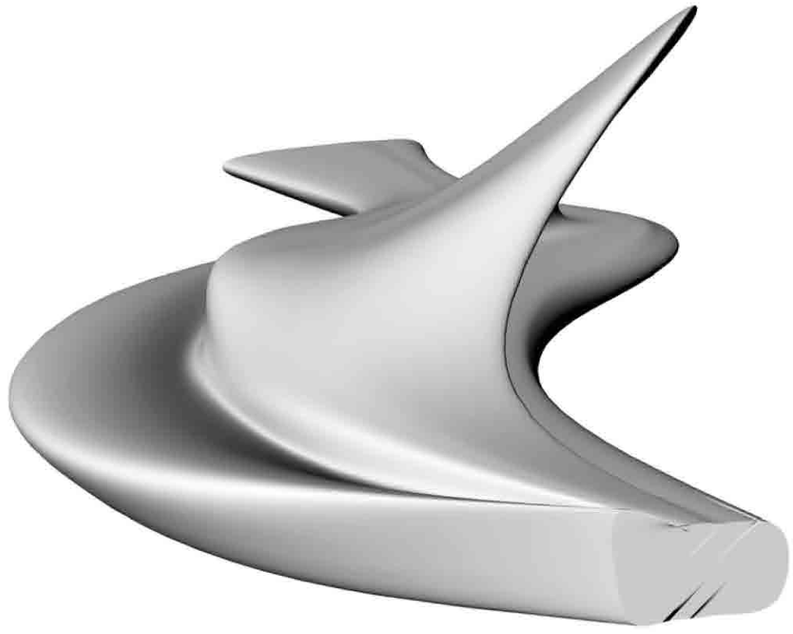

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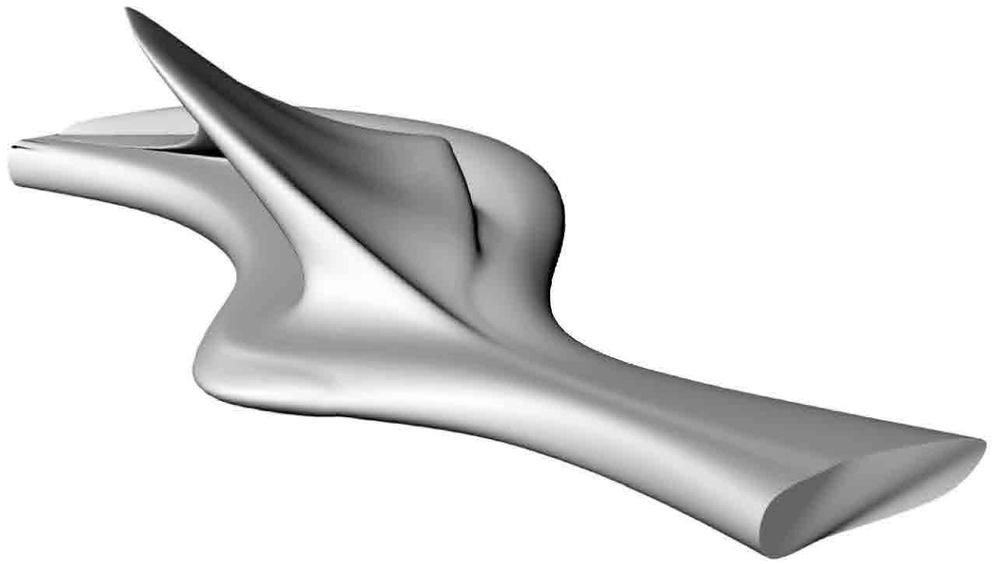
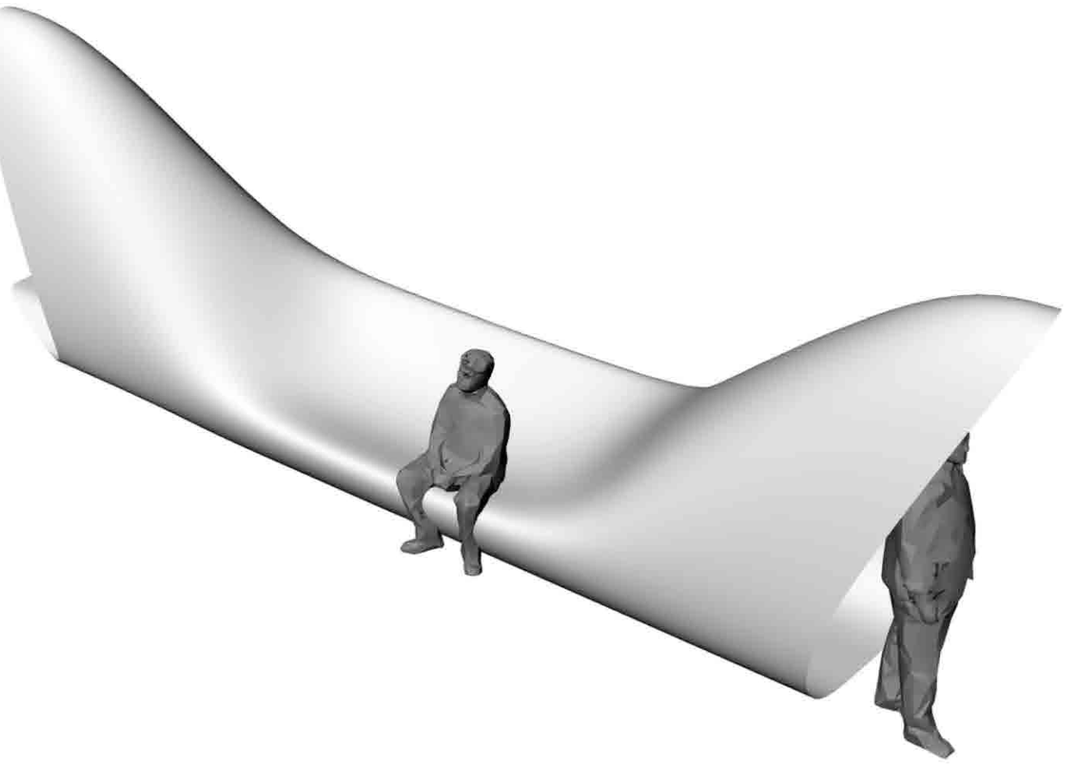
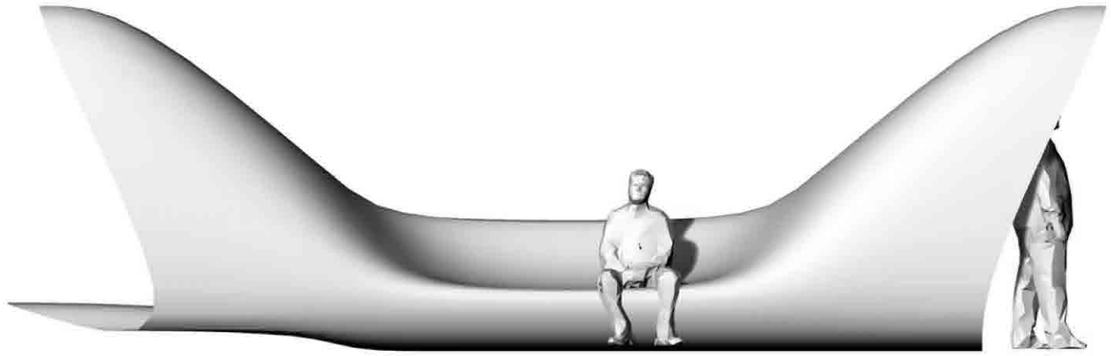


Perspective II





DESIGN

2b Design IV

Sitting

Laying

- Weather proof,
- Soft: comfortable to sit on
- Durable
- Strong (vandalism-proof)

Stretching
- No need for soft/comfortable surface
- Avoid dirt from shoes

Sit-ups
- Breathing surface (as people sweat)
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Pull-ups
- Bar should provide extra grip for hands

Leg-raises
- Hands need grip support
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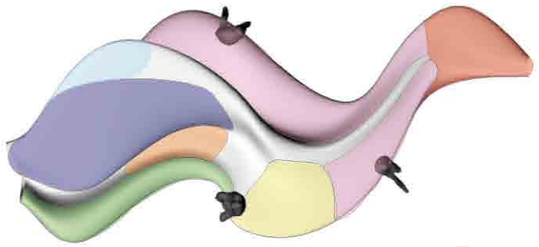
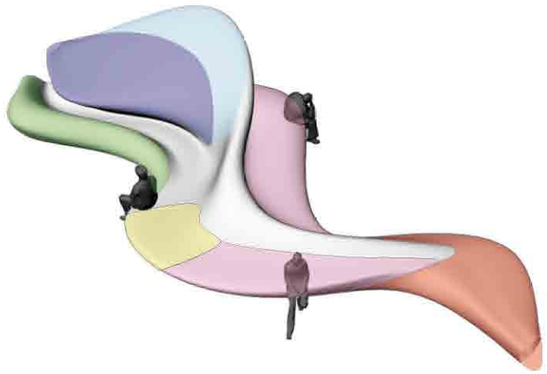


Plan view



Isometry

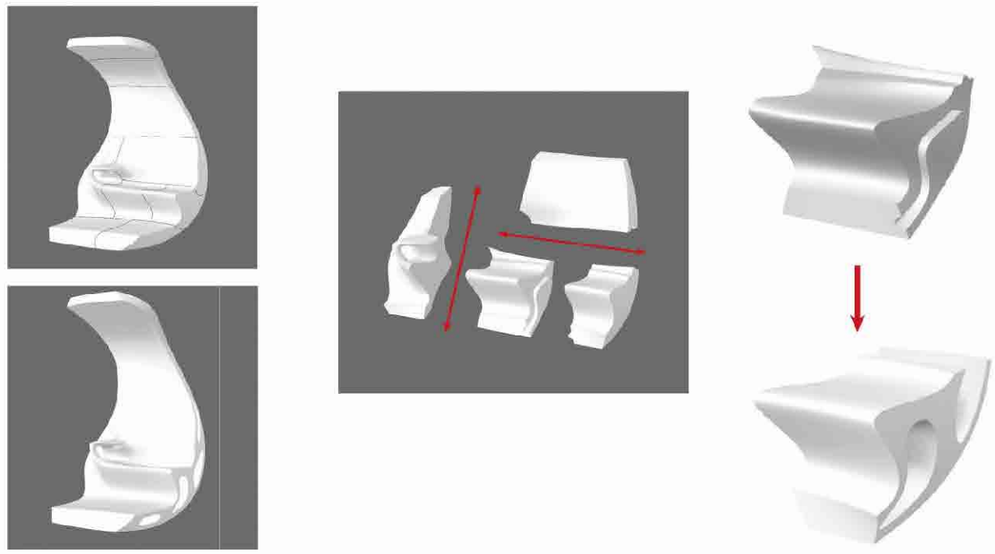
Front view

Side view

3 MATERIAL

MATERIAL

3a Asembly and finish



Neoprane Rubber and plastic

Type	Pros	Cons	Cost per kg
ABS	Tough; Common; Non-toxic	High melting point; Unpleasant fumes	€20,- to €50,-
PLA	Easy to print with; Biodegradable	Prints degrade over time; Rough texture	€20,- to €50,-
PVA	Water soluble; Fairly easy to print	Expensive; Risk of toxic fumes	>€100,-
Nylon	Tough; Inexpensive	High temperature requirement	€18,-
HDPE	Easy to dissolve; Lightweight	High temperature requirement	€30,-
T-Glase/PETT	Food-safe; Glass-like look	Slow to print; Heated printing bed needed	€30,-
Wood Filament	Attractive wood-like look	Finicky to use; Requires sanding	€60,- to €100,-
Metal Filament	Attractive metal-like finish	Finicky to use; Expensive	€75,- to €120,-
Carbon Fiber Mix	Mimics carbon fiber's lightweight strength	Tough on extruders; Expensive	€50,- to €120,-
Flexible filament	Produces flexible prints	Requires tinkering with the printer	€50,- to €120,-
TPU95A	High impact strengt, durable flexible, chemical resistant	Not flexible	€75,-
CPE-FAMILY	Chemical resistant, tough and demonstrate good dimensional stability, higher temperature resistance and increased impact strength	High temperature requirement	€60,-
PC	Strong and tough parts that retain dimensional stability when subjected to temperatures as high as 110 °C.	UV sensitive	€65,-
PP	High toughness, exceptional fatigue resistance, and low friction. It also has good chemical, temperature, and electrical resistance.	Difficult to print	€80,-
RECYCLED	Prevents plastic waste	Adjustment process is not environment friendly	Depends

MATERIAL

3b Neoprane rubber finish

Types of Rubber
There are many types of rubber, each with special properties:
Neoprene Rubber – Good weatherability and resistance to abrasion.

Buna-N Rubber – Resists oil and solvents. Not as weather resistant. Also called nitrile, acrylonitrile, and NBR.

Silicone Rubber – Good flexibility and resistance to ozone, sunlight, and oxidation. Very good electrical insulator. Also called polysiloxane.

EPDM Rubber – Excellent for outdoor use.

Natural Gum Rubber – Superior resilience, tensile strength, elasticity, and abrasion resistance.

Viton Rubber – Resists corrosive environments, with exceptional resistance to heat, aging, weather, ozone, oxygen, and sunlight, plus fuels, solvents, and chemicals. Good flame resistance. Also called FKM.

Natural Latex Rubber – Ultra-elastic has excellent strength and stretchability. Has exceptional tear resistance.

SBR Rubber – Has good abrasion and wear resistance. Also called styrene butadiene.

Vinyl Rubber – Good resistance to water, chemicals, and weathering. Also called polyvinyl chloride (PVC).

Santoprene Rubber – Combines the characteristics of rubber and plastic to produce a material that offers excellent weatherability and chemical resistance.