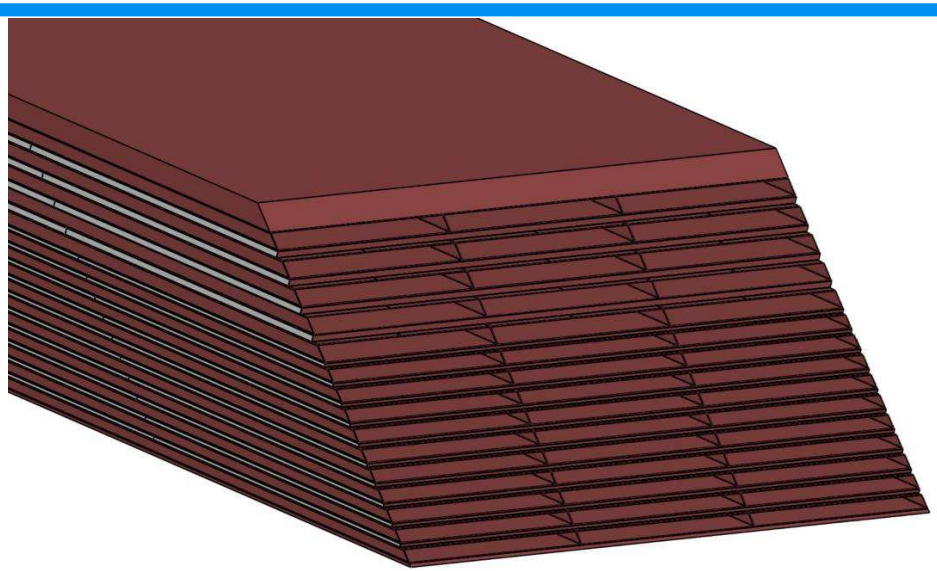
ECAL MECHANICAL R&D

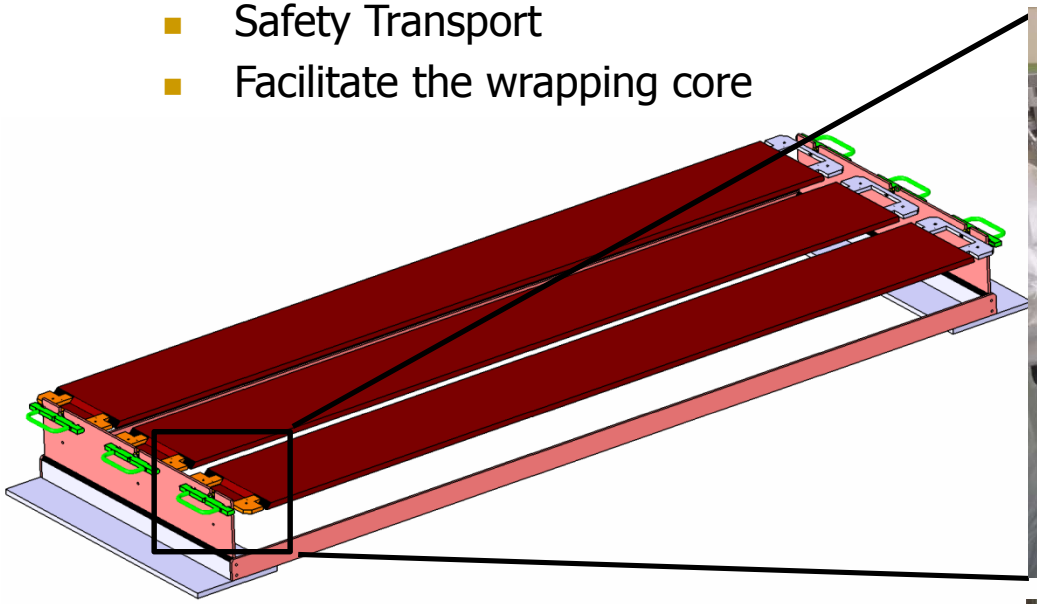


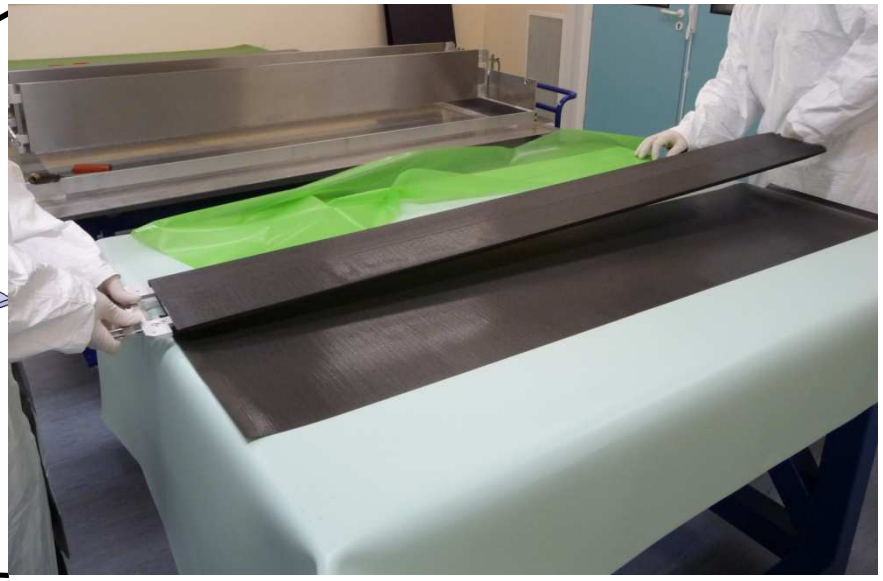
EUDET news -

State of mechanical EUDET.

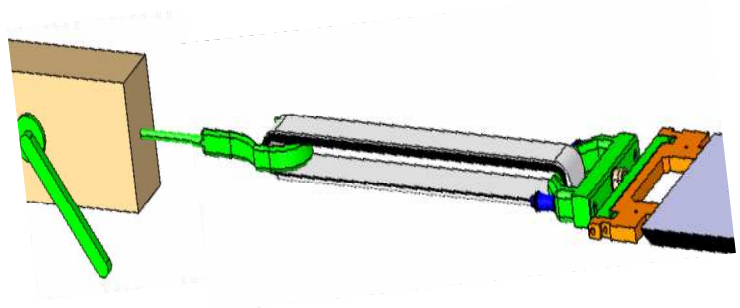
EUDET TOOLS : Study and design

- EUDET handle core
  - Safety Transport
  - Facilitate the wrapping core





- Winch extraction core
  - Control the traction force



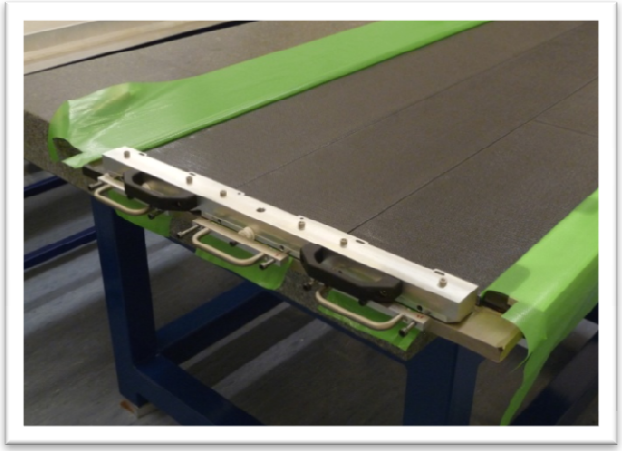
EUDET – Product layer (1/3)

Main process steps :

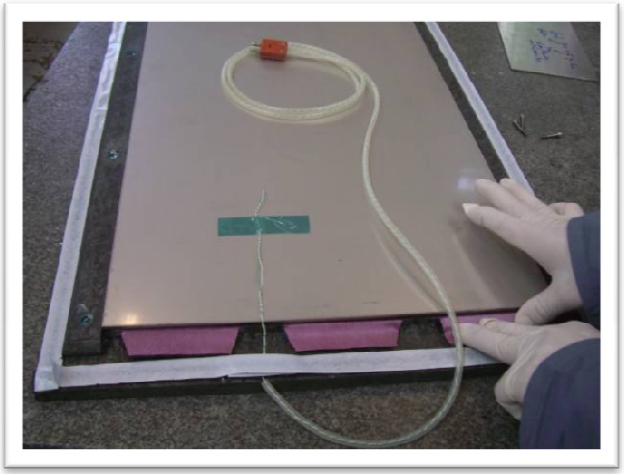
1 - mould release preparation

2 - Cores wrapped with prepreg

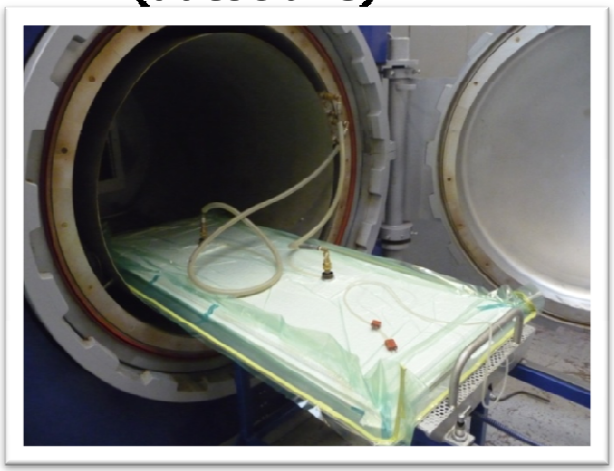
3 – Compression step

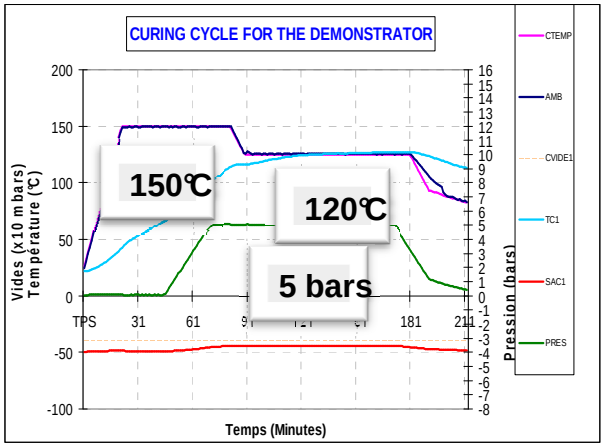


4 – Thermal sensor equipment



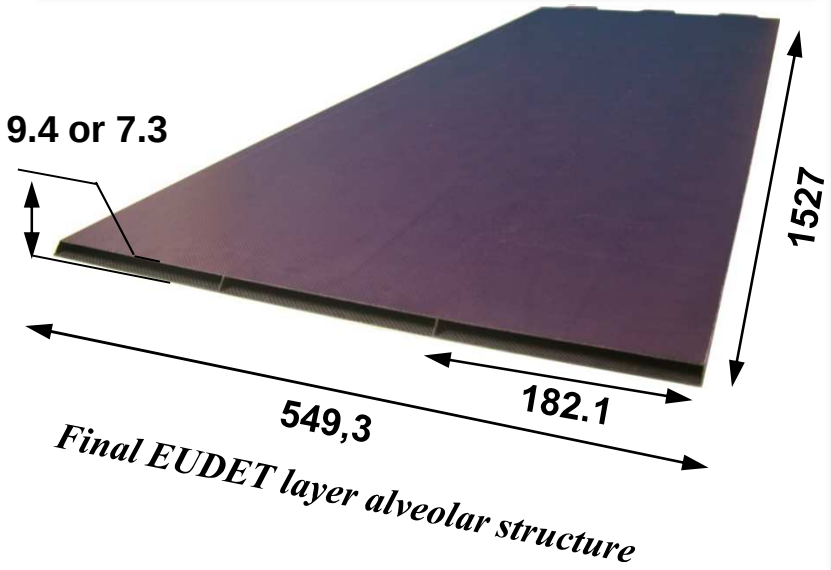
5 – Curing operation (autoclave)





EUDET – Product layer (2/3)

6 – After curing step

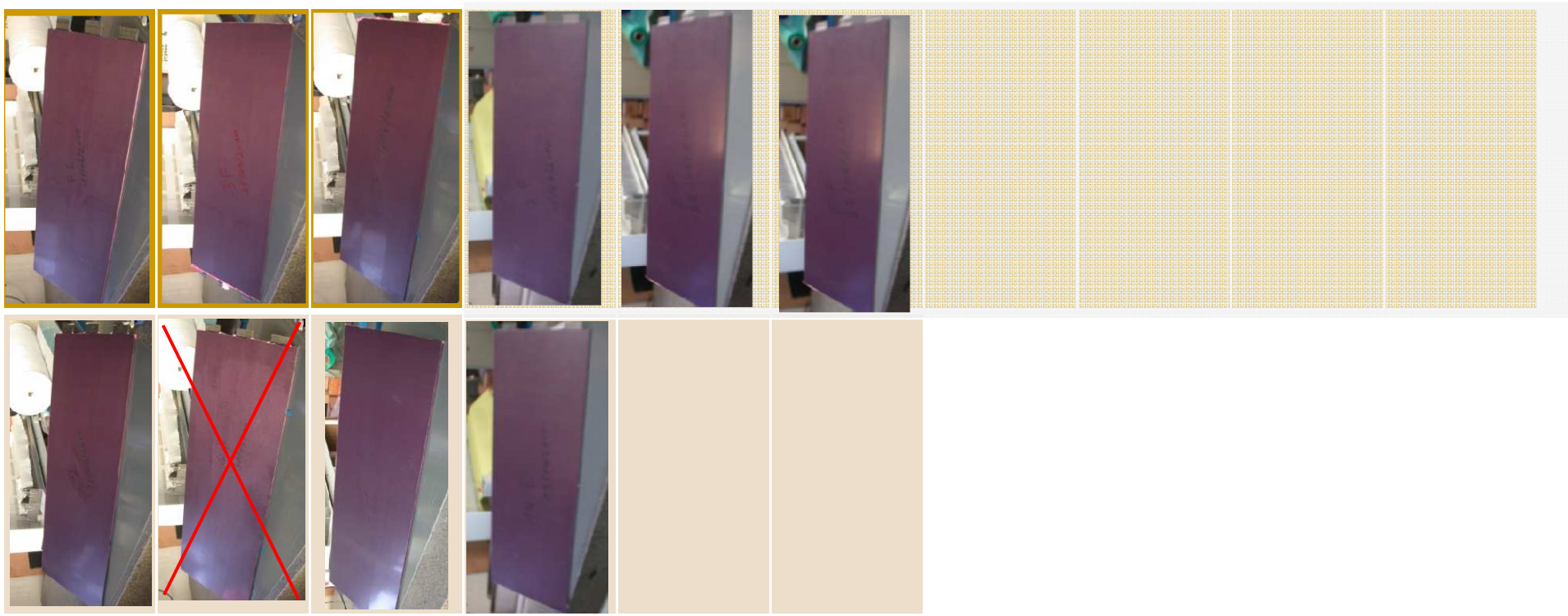


Final EUDET layer alveolar structure

7 – Main issue : 1200 Newtons of cores traction

EUDET – Product layer (3/3)

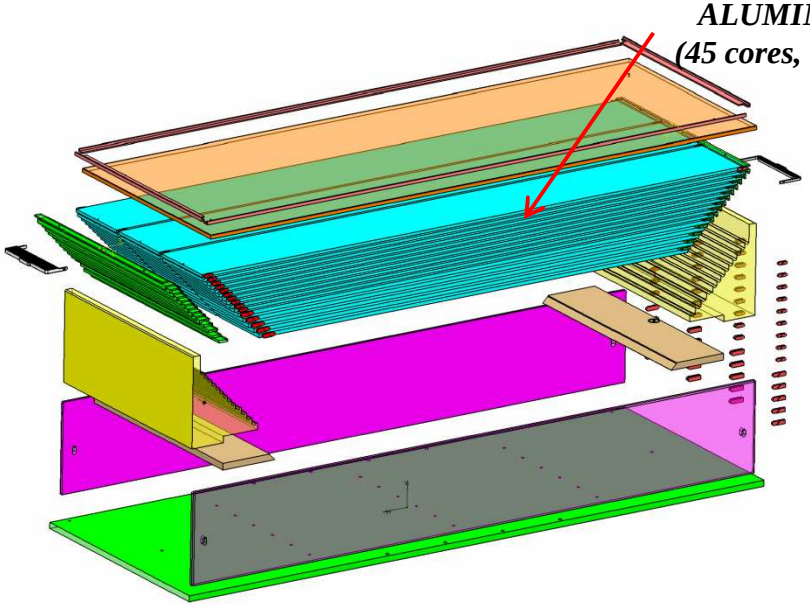
Layer 7.3 ⇨ 6/10 "Alveolar EUDET layer" structure : ***On going***

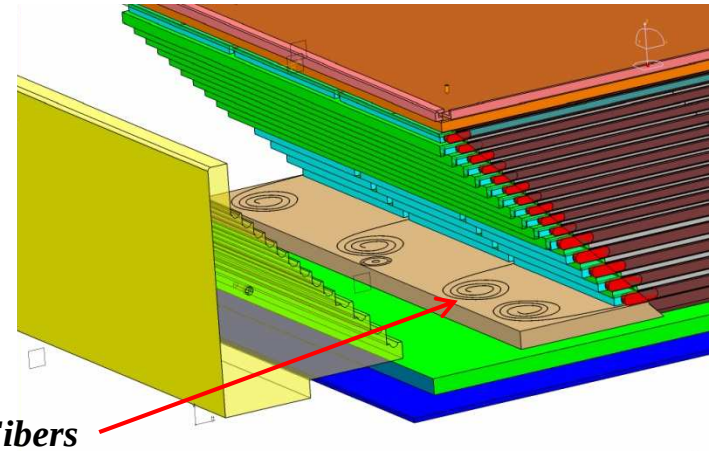


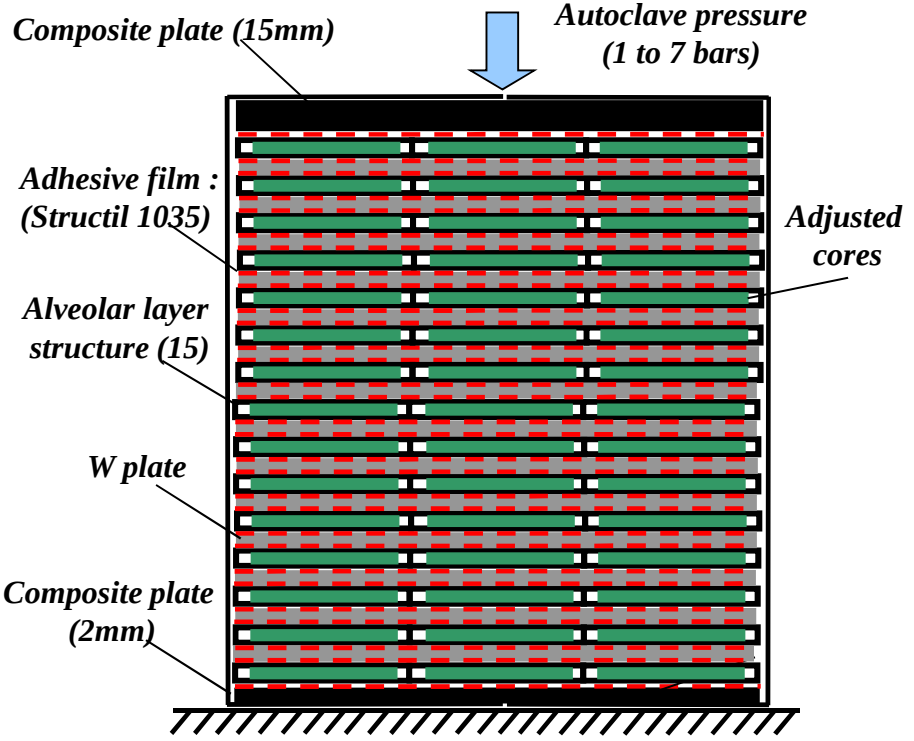
Layer 9.4 ⇨ 3/5 "Alveolar EUDET layer" structure : ***On going***

EUDET– Assembly Mould

Now, here is the EUDET assembly mould :







- ⇨ Global design : ***OK***
- ⇨ W and Carbon Needs : ***OK***
- ⇨ Detailed design description : ***OK***
- ⇨ Technical drawing : ***OK***
- ⇨ Ordered : ***OK***
- ⇨ Optical fiber studies : ***in Jun***

The schedule:

- We will plan:
  - 10 alveolar layers in — **First half-year (2010)**
  - Optical integration Studies — **Jun (2010)**
  - Eudet structure assembled — **Second half-year (2010)**
  - "14" H or U Short structure — **second half-year (2010)**
  - "1" H or U long structure — **second half-year (2010)**
  - Mould reception EUDET — **July 2010**
  - Cutting layer operations — **September 2010**
  - Studies the thermals inerties parameters — **September 2010**
  - Build the EUDET module — **September 2010**
  - EUDET tools and beam tests tools — **Second half-year (2010)**

	Nom de la tâche	Durée
20	2.1.1 hextool raw machining	15 jours
21	2.1.2 col plate	15 jours
22	2.1.3 Pressure bar	15 jours
23	**2.2 Start alveolar structure production**	**344 jours**
24	2.2.1 Purchase Carbon type 3k	32 jours
25	2.2.2 Production alveolar (1 layer with 3 cells)	5 jours
26	2.2.3 Production alveolar (1 layer with 3 cells)	5 jours
27	2.2.4 Production alveolar (1 layer with 3 cells)	5 jours
28	2.2.4 Production alveolar (1 layer with 3 cells)	5 jours
29	2.2.5 Production alveolar (1 layer with 3 cells)	5 jours
30	2.2.6 Production alveolar (1 layer with 3 cells)	5 jours
31	2.2.7 Production alveolar (1 layer with 3 cells)	5 jours
32	2.2.8 Production alveolar (1 layer with 3 cells)	5 jours
33	2.2.9 Production alveolar (1 layer with 3 cells)	5 jours
34	2.2.10 Production alveolar (1 layer with 3 cells)	5 jours
35	2.2.11 Production alveolar (1 layer with 3 cells)	5 jours
36	2.2.11 Production alveolar (1 layer with 3 cells)	5 jours
37	2.2.13 Production alveolar (1 layer with 3 cells)	5 jours
38	2.2.14 Production alveolar (1 layer with 3 cells)	5 jours
39	2.2.15 Production alveolar(1 layer with 3 cells)	5 jours
40	2.2.16 Production alveolar (1 layer with 3 cells)	5 jours
41	2.2.17 Acceptance alveolar	1 jour
42	**2.3 Assembly mould**	**346 jours**
43	2.3.1 Conception assembly mould	206 jours
44	2.3.2 Detail drawing	10 jours
45	2.3.3 Supplier selection	35 jours
46	2.3.4 Production Part	40 jours
47	2.3.5 Acceptance Part	5 jours
48	2.3.6 Test Assembly mould	15 jours
49	2.3.7 Résults analys	5 jours