



COMACT

Un projet de séchoir Particulier!



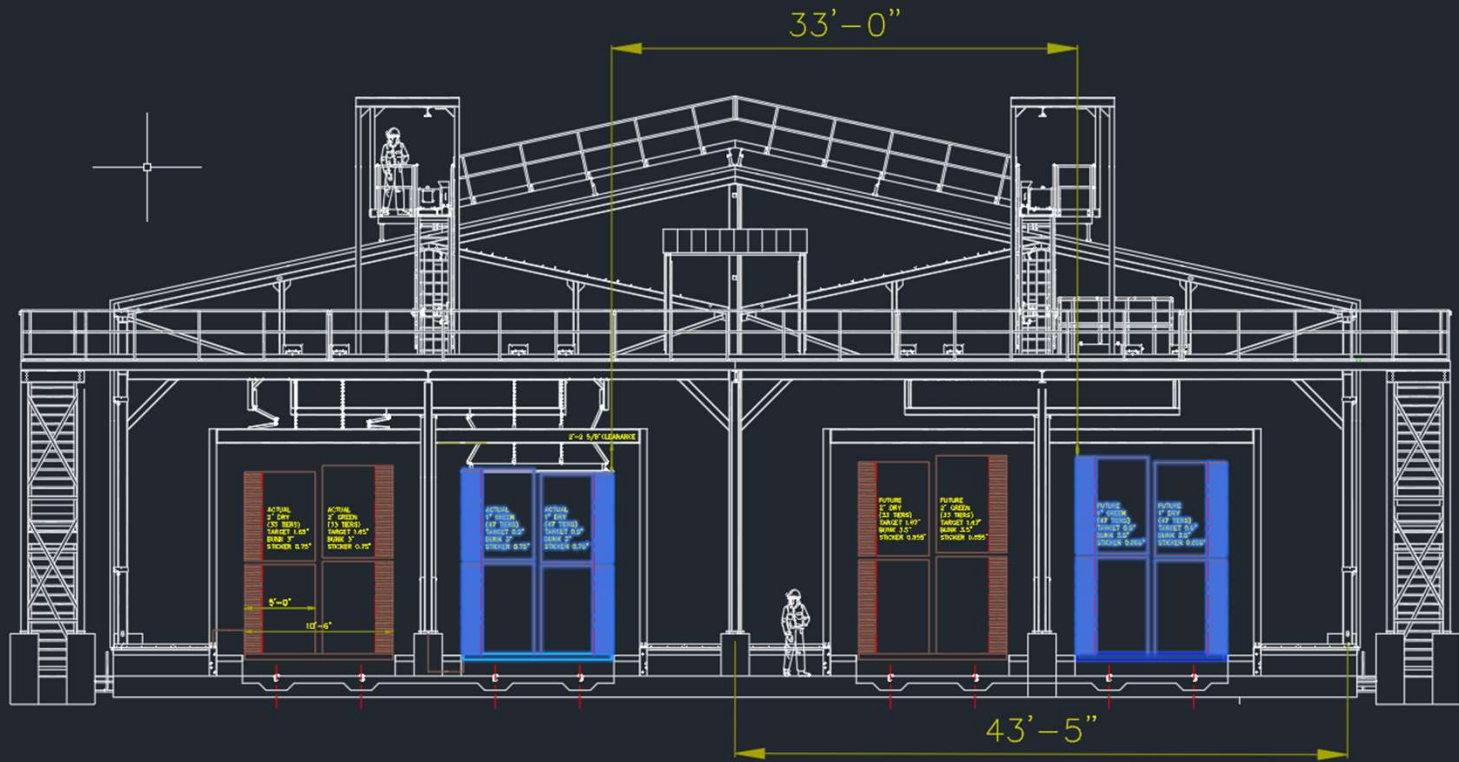
Projet de Séchoir



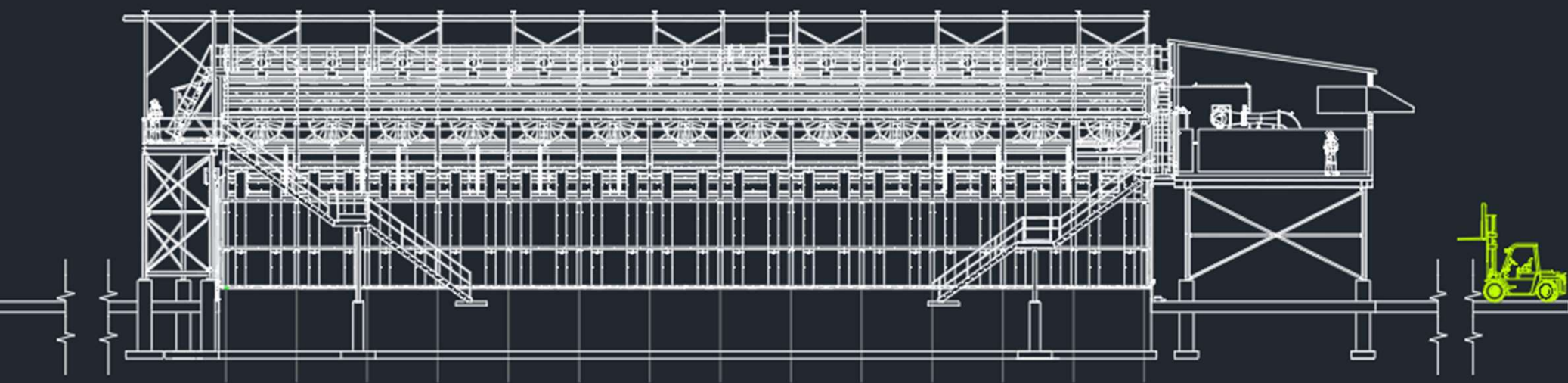
Projet de Séchoir

- 2 séchoirs batch de 130 pieds
- Feu direct, bruleur au gaz naturel
- Mur mitoyen et toit incliné commun
- Salle mécanique au dessus de la zone de chargement
- Ventilateurs 50 HP externes sur le toit
- Mécanisme de lestage automatique
- Assez d'espace entre les rails pour la chargeuse

Projet de Séchoir



Projet de Séchoir



Définition des critères de performance

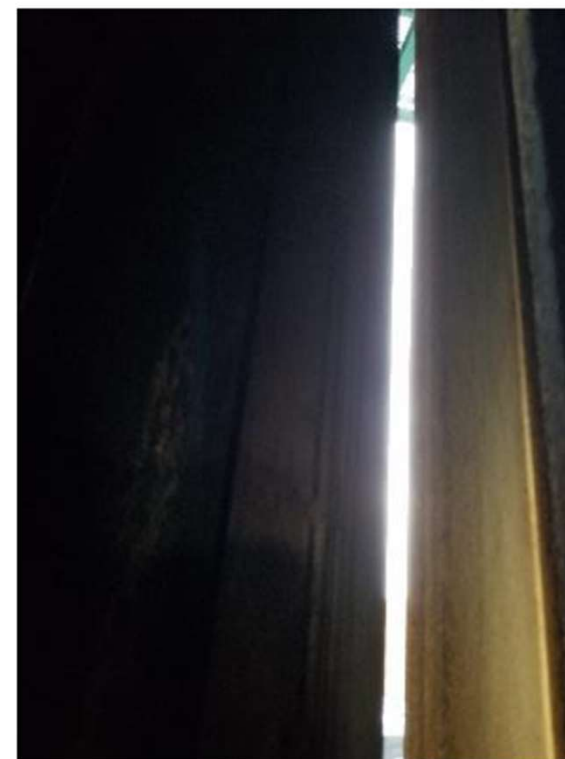
- Obtenir 90% sur tous les critères de l'audit FP Innovations
 - Étanchéité
 - Composant mécanique
 - Contrôle
 - Ventilation
 - Température

Définition des critères de performance

KILN #5 TIGHTNESS

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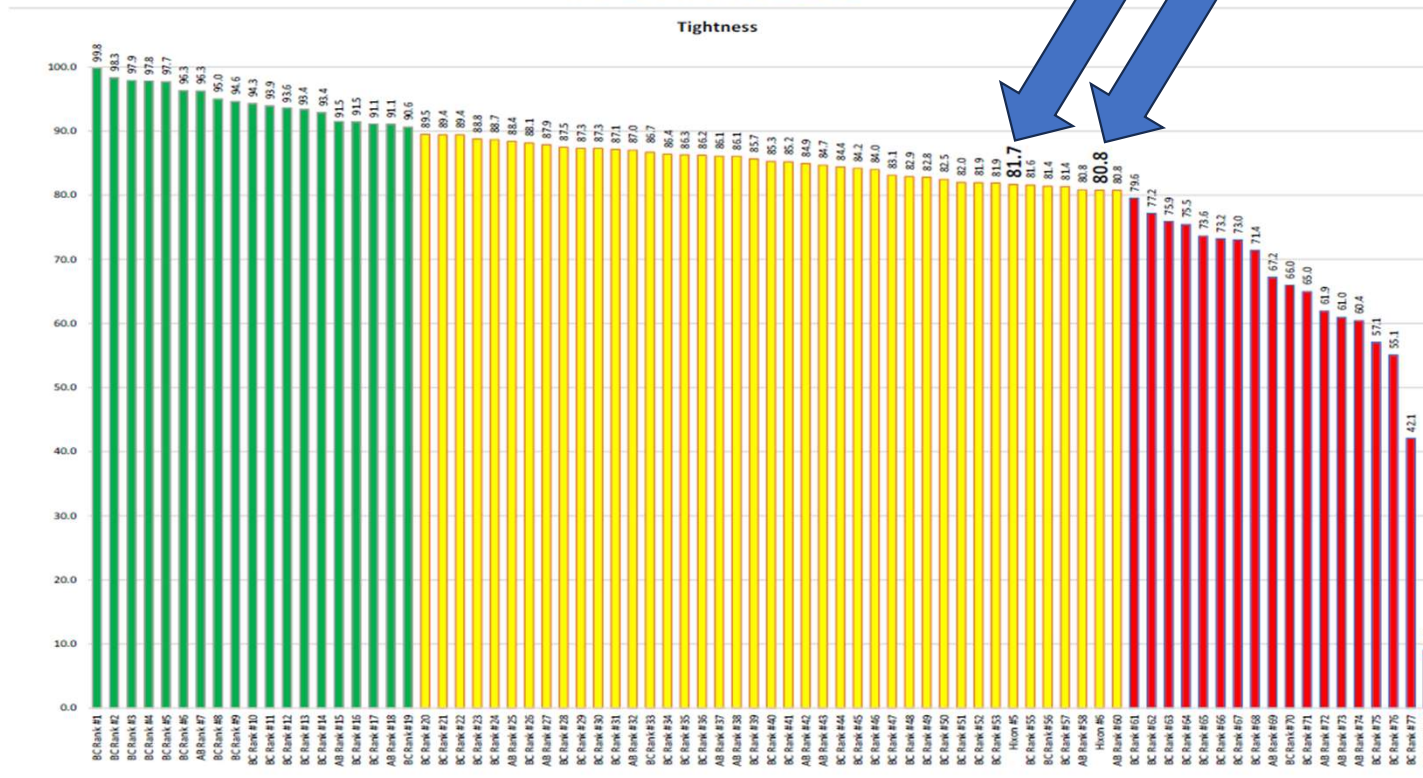
1.1 TIGHTNESS	81.7
1.1.1 DOORS	46.5
TOP	93.8
SIDES	16.5
BOTTOM	100.0
NE	50.5
SE	46.7
NW	43.6
SW	45.2
1.1.2 WALLS & ROOFS	100.0
1.1.3 VENTS - CLOSURE	98.6



Définition des critères de performance

TIGHTNESS

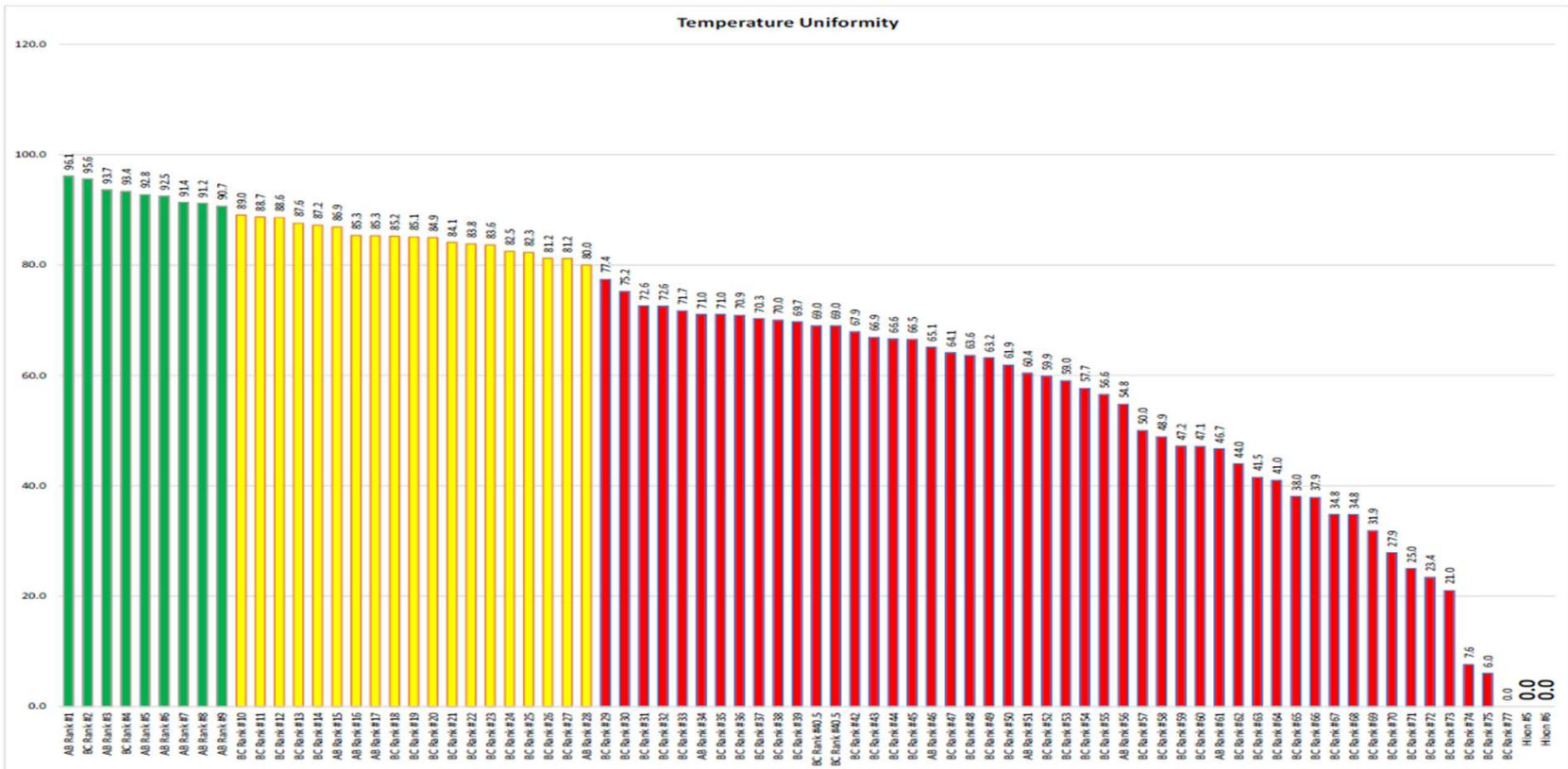
12



Définition des critères de performance

TEMPERATURE

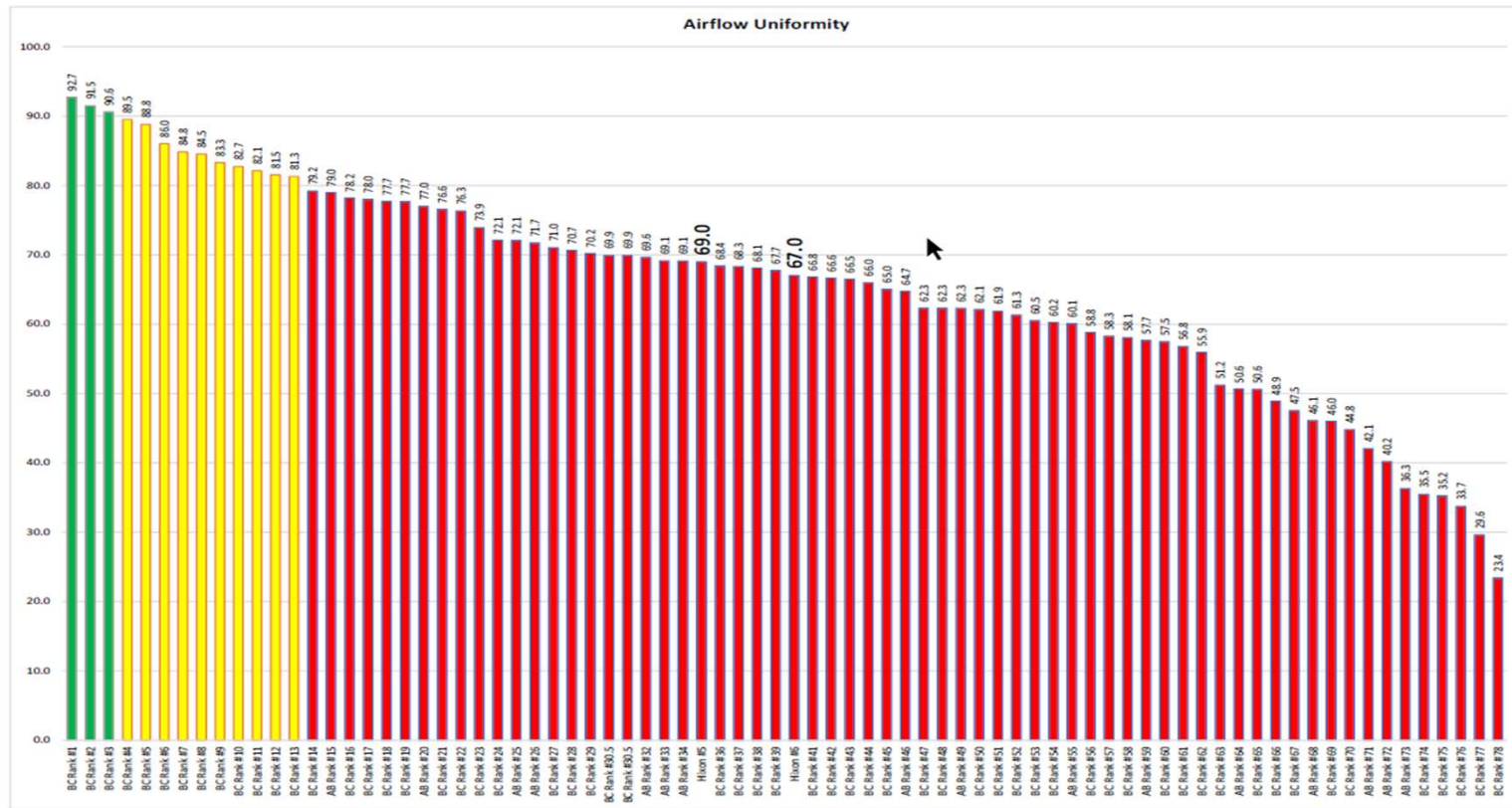
33



Définition des critères de performance

AIRFLOW

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Définition des critères de performance

- Ventilation; Vitesse

$$\frac{\text{Vitesse d'air réelle}}{\text{Vitesse d'air théorique}} > 90\%$$

- Ventilation; Uniformité

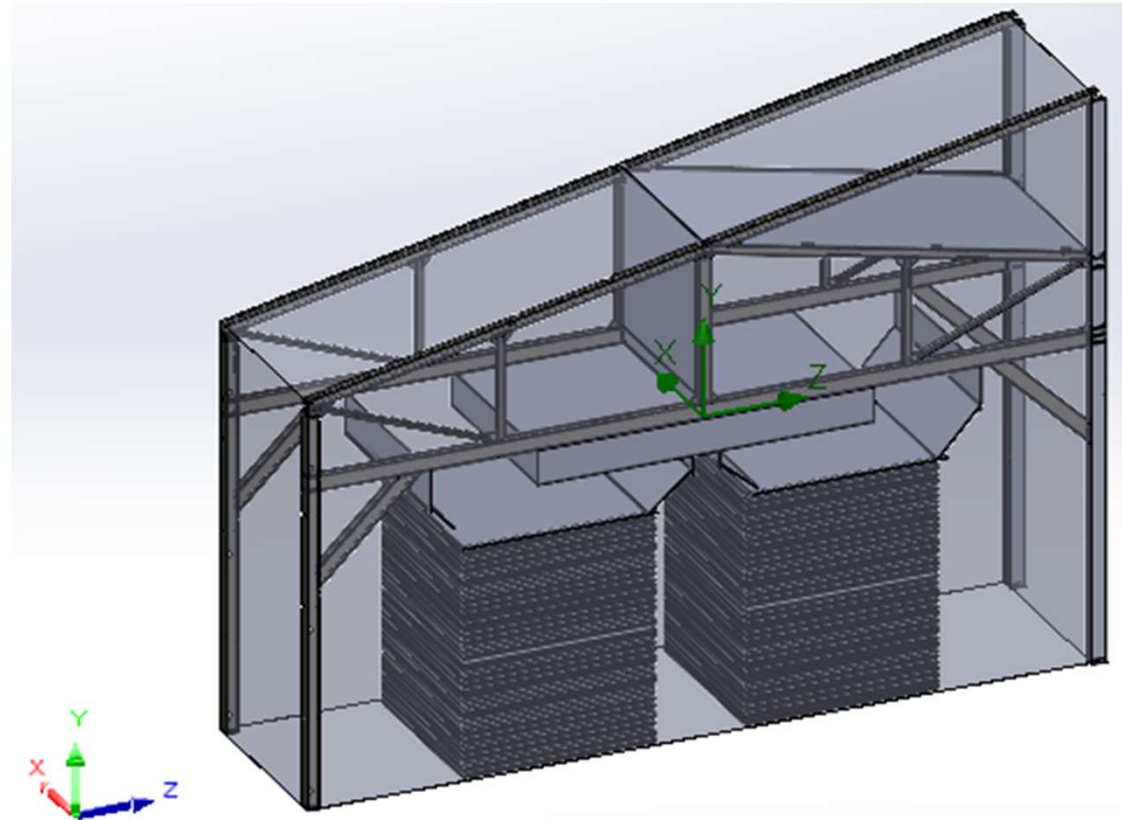
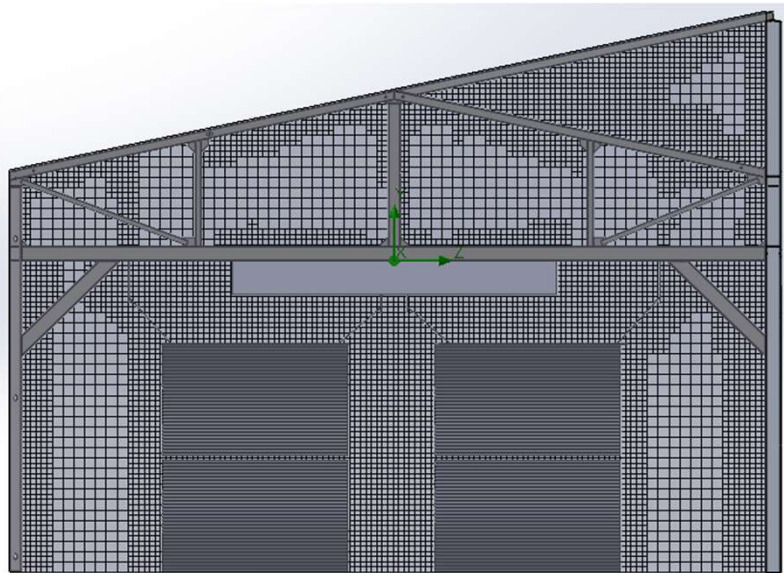
$$COV = \frac{\text{Écart Type}}{\text{Moyenne}} > 11$$

- Température

Écart maximal de 3.9 °F

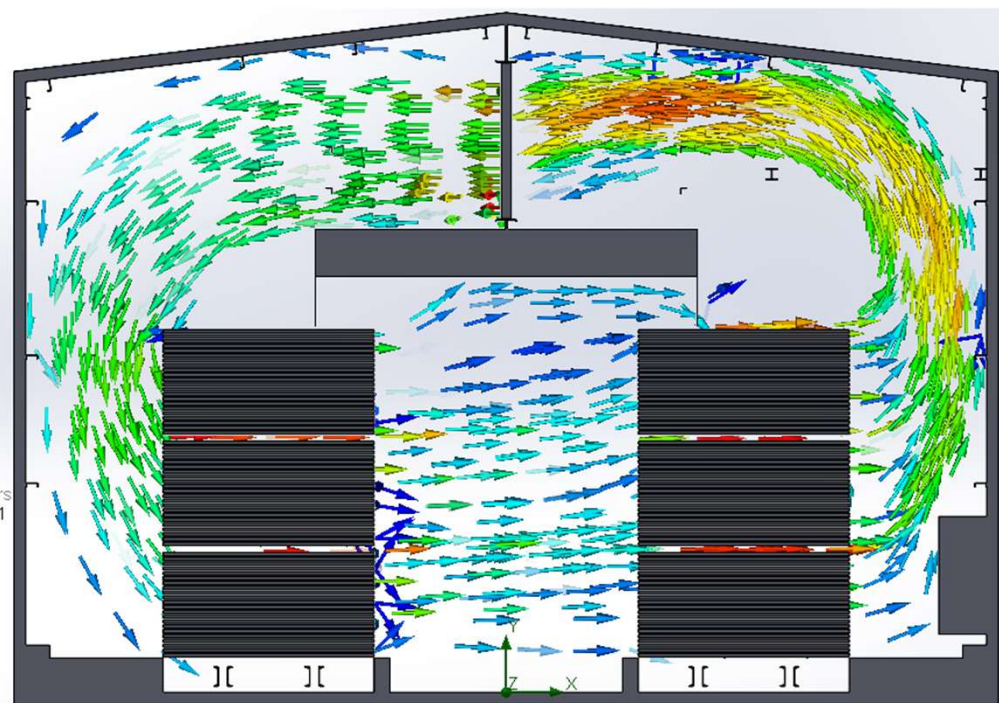
Conception du séchoir

- Analyse par éléments finis

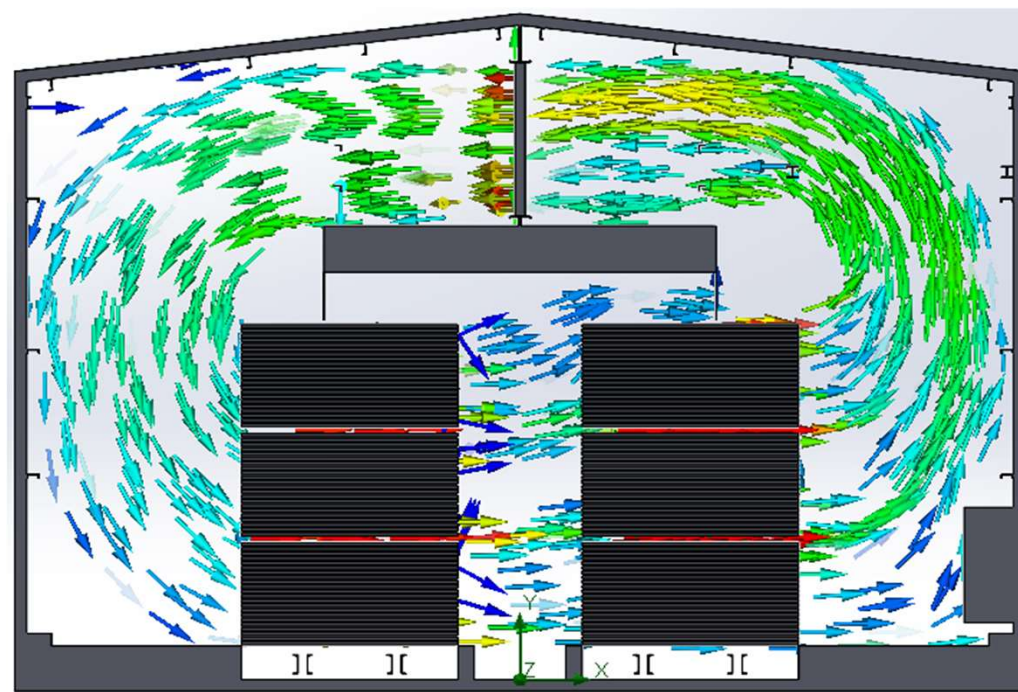


Conception du séchoir

Élargissement au centre

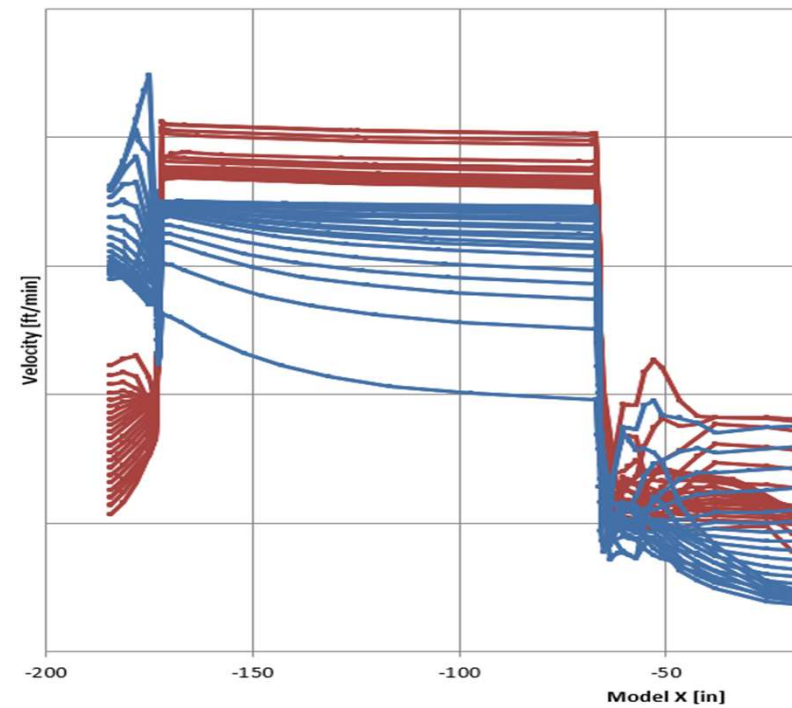


Élargissement des côtés

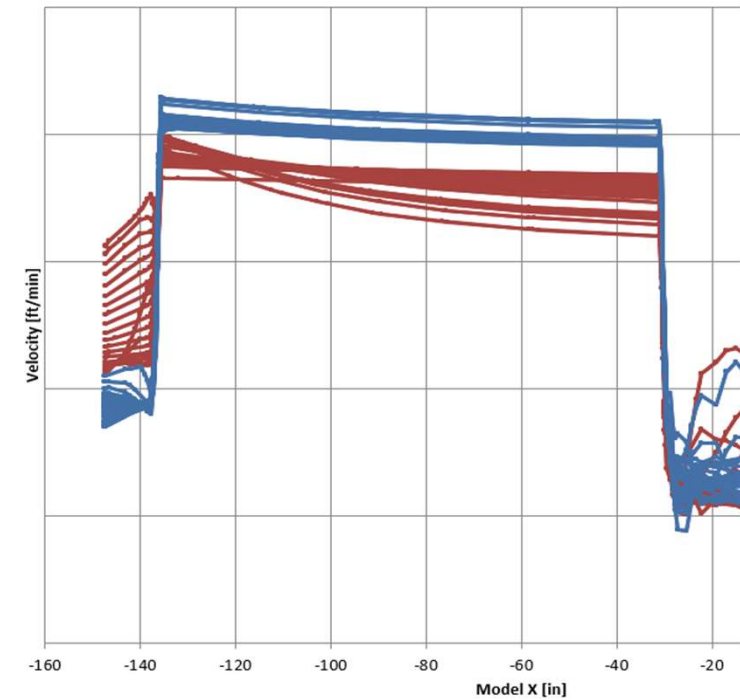


Conception du séchoir

Élargissement au centre



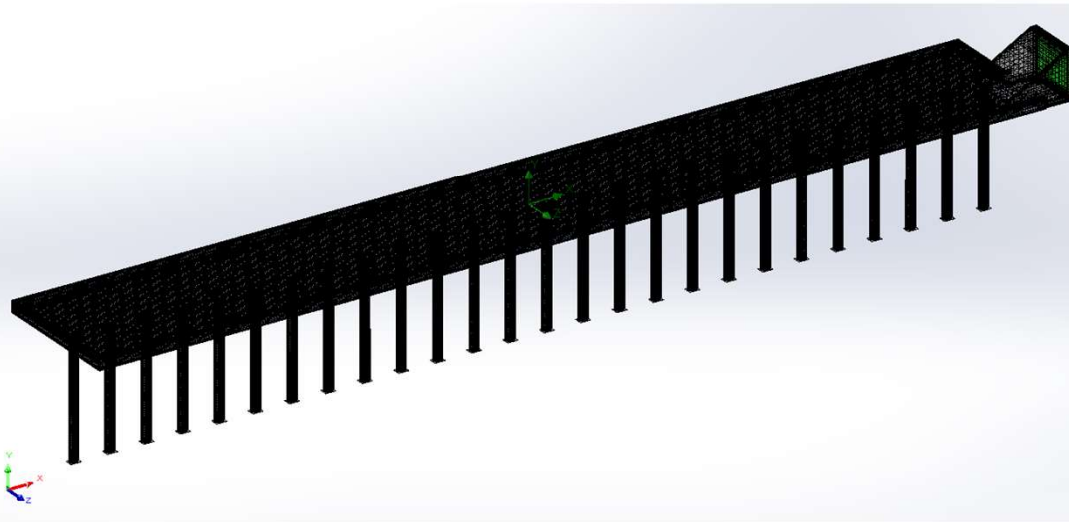
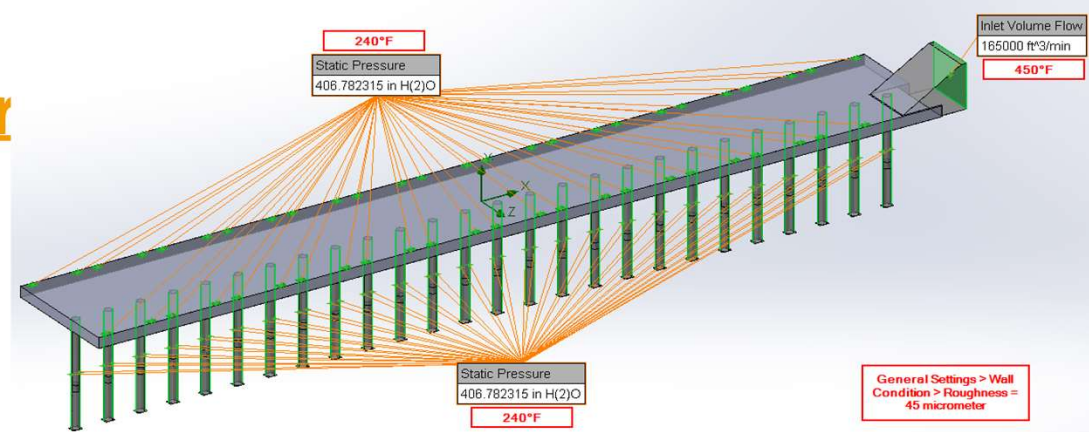
Élargissement des côtés



— UPPER BUNDLE
— LOWER BUNDLE

Conception du séchoir

- Conception du plenum



Construction



Construction



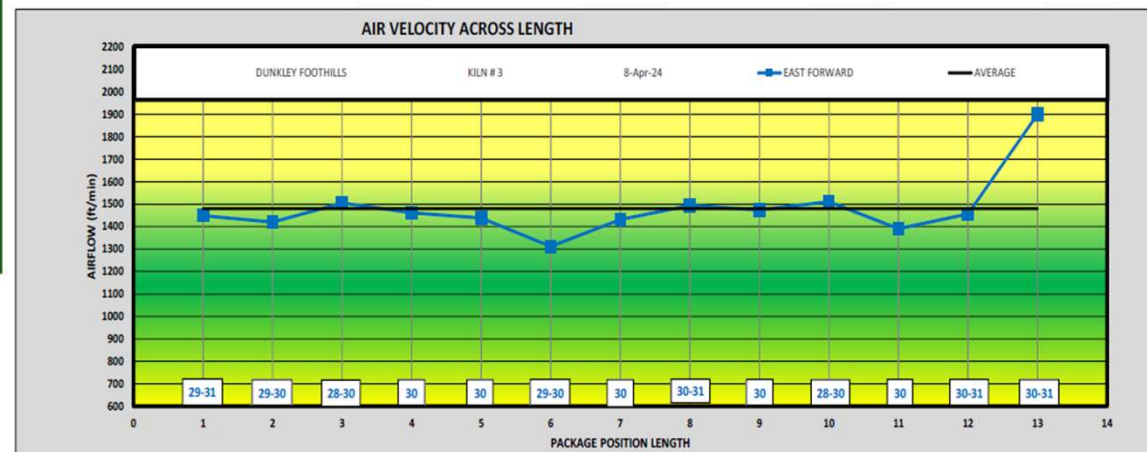
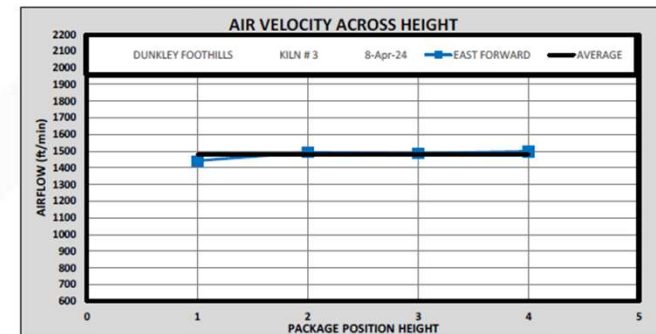
Test de performances

KILN #3

2.1 AIR VELOCITY	95.4
2.1.1 AVERAGE	100.0
2.1.2 UNIFORMITY	90.8

- Current average airflow is 1480fpm which is at the top end of optimal drying (800-1500fpm) & is mostly uniform.
- Airflow loses of 497fpm under the carts
- Based on the given total installed horsepower (650HP) & 532ft² of measured load opening , this kiln is at it's maximum air velocity potential.

AIRFLOW



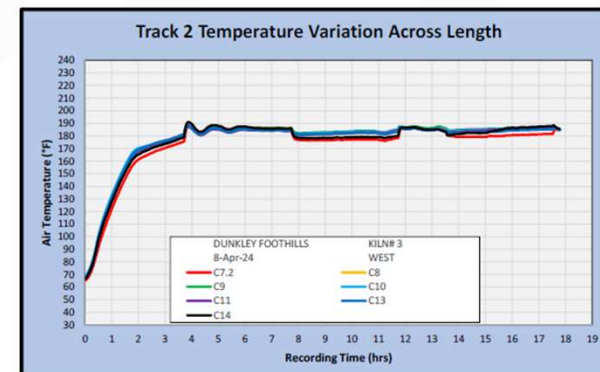
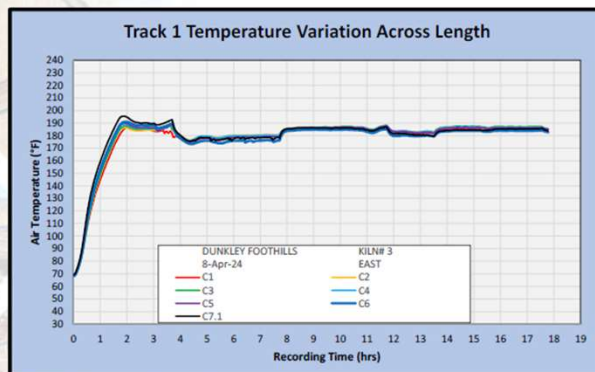
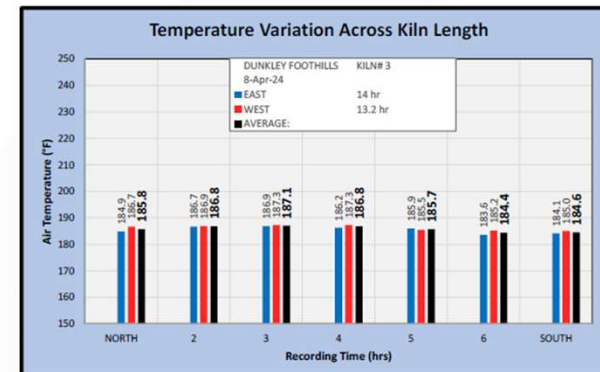
Test de performances

KILN #3

TEMPERATURE UNIFORMITY

2.2 AIR TEMPERATURE UNIFORMITY 92.1

- 2.8°F average difference across the length of this kiln with a max difference of 3.3°F.
- Ensuring the kiln tightness (doors, baffles, vents etc.) is maintained as this reduces energy losses.



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Test de performances

AUDIT SCORING SYSTEM

Colour coded prioritization

In Control
100-90.1

Warning
90-80.1

Opportunity
80-00

KILN#	3	85.1
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KILN#	4	81.0
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Test de performances

PRIORITY OF ACTIONS ITEMS

Recommendations are in order of priority based upon the highest impact & ease of implementation.

1. RTDs:
 1. Calibrate the effected DB & WB RTD's.
2. Vent alignment:
 1. Ensure all vents close correctly.
 2. Opening: Ensure all vents open to the same distance.
3. Door seals:
 1. Repair the door seals in all doors to correct seals.
 2. Ensure doors are seating correctly.
4. Fan blades:
 1. Uniform pitch angles.
5. Baffles: Replace/repair/consider adding brush baffles to:
 1. Consider adding brush baffles to walkways and end baffles.

Test de performances

AUDIT SCORING SYSTEM

Colour coded prioritization

In Control
100-90.1

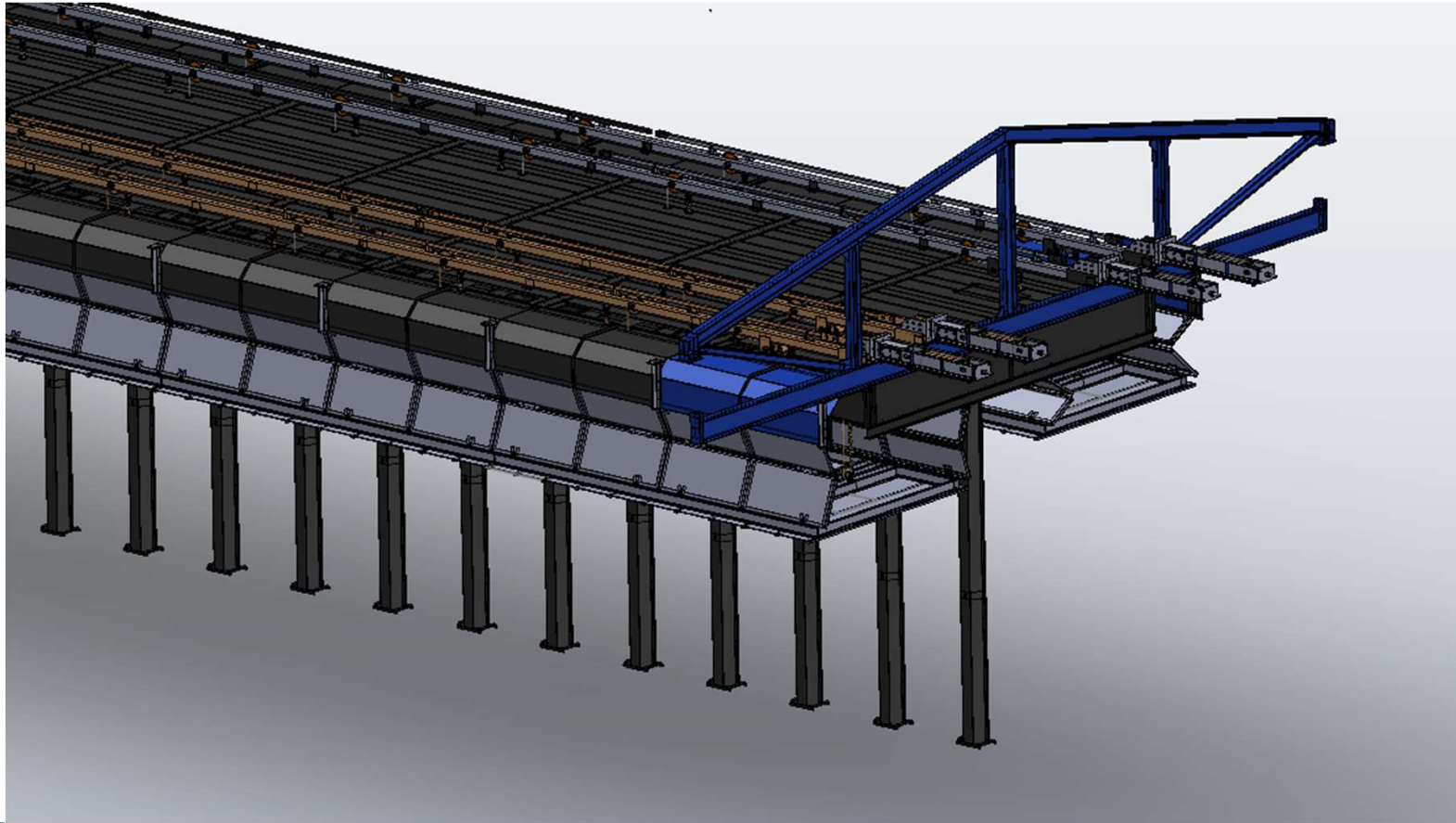
Warning
90-80.1

Opportunity
80-00

KILN#	3	95.8
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KILN#	4	94.1
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Temps de séchage



Temps de séchage

- Exclusivement EPS
- 2x3:
 - Hiver 19.5 hr
- 2x4:
 - Été 22 hr
 - Hiver 24.5 hr
- 2x6:
 - Hiver 25 hr
- 2x4/2x6 Humide:
 - Été 36 hr
 - Hiver 40 hr



Avantage de l'évaluation par FPI

- Les critères de performances sont clairs et pertinents
- Force les manufacturiers à s'assurer d'un design optimal
- L'audit est neutre, complet et rapide
- Permet de comparer avec un bassin de séchoir

Questions?



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