



CEN

Binder Board

CENboard with CENbinder unfolds
safe spaces and the world

Specialized manufacturer of eco-friendly
nonflammable MDF board with advanced
material

Nonflammable and
Eco-friendly
Advanced Material

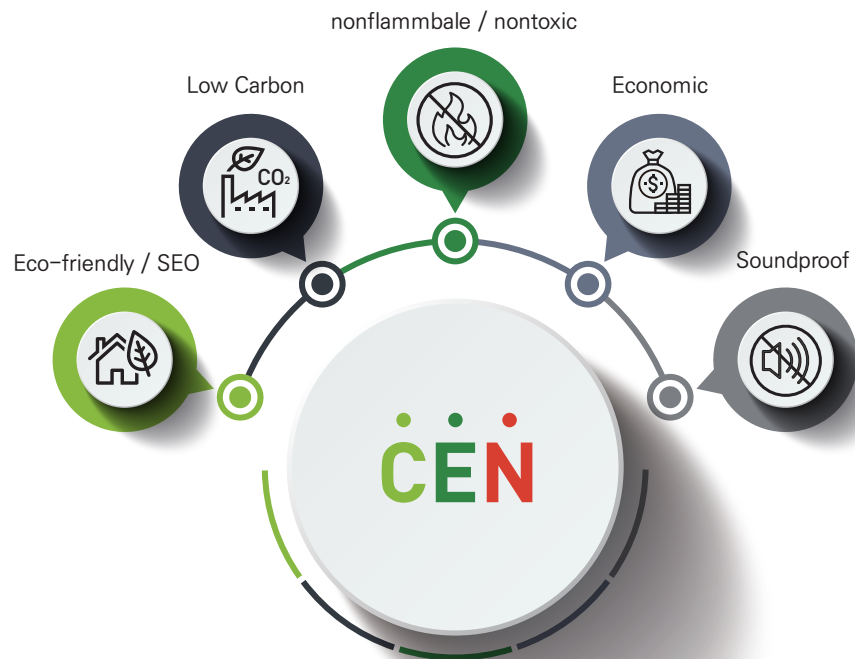


Carbon neutral Eco-friendly Nonflammable



Big fires and smoke emissions causes neumerous casualties, also leading to enormous economic losses. As leading company of low carbon, eco-friendly and nonflammable material, we pursue dignity of human life, going for green growth by resource circulation and carbon-neutral with recycling forestry, agricultural and one-year-old plants like corn stalk, wheat stand, rice straw, etc.

Sanghyun Baeg, CEO



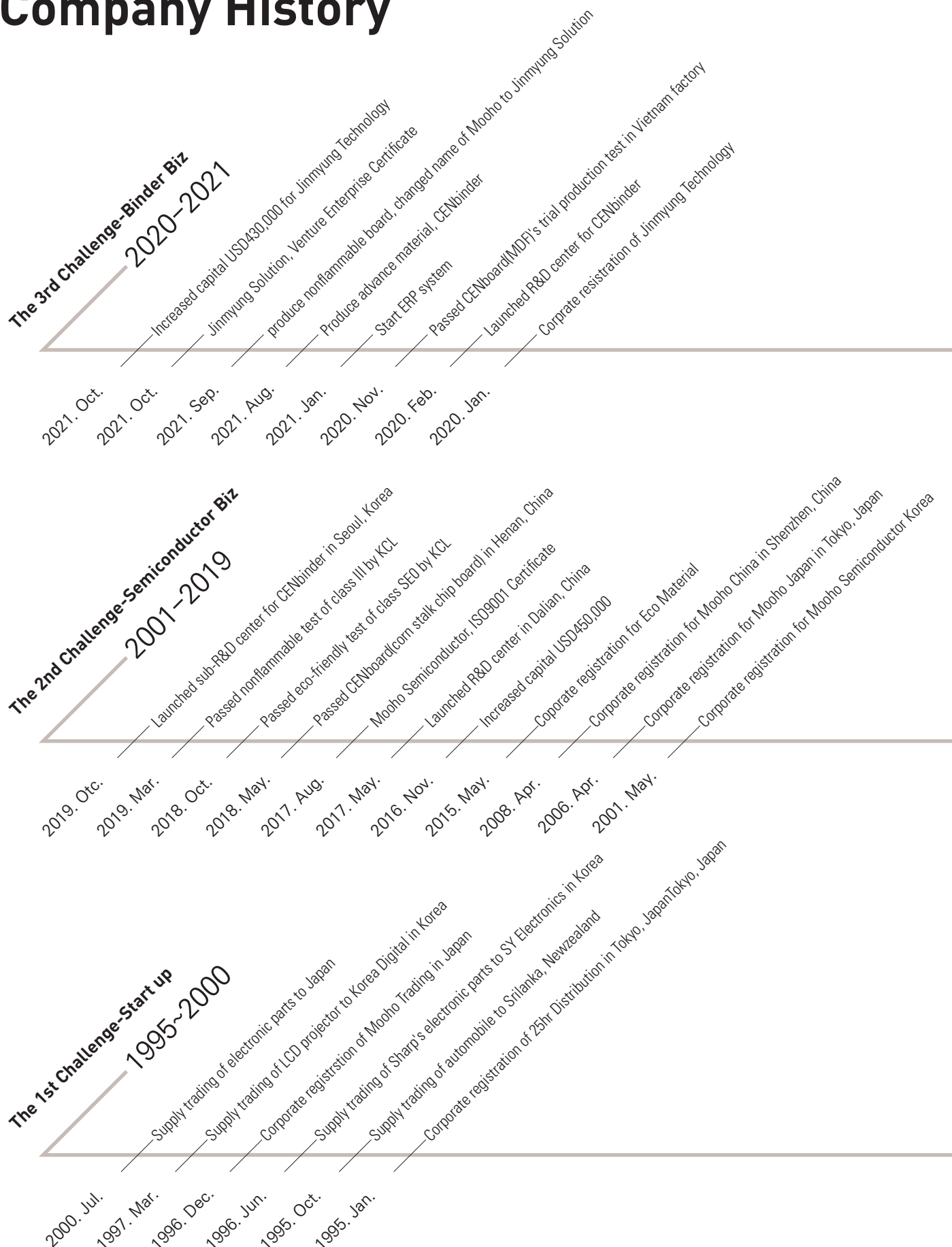
Jinmyung Solution Co., Ltd. Jinmyung Technology Co., Ltd.

Jinmyung Technology offer one-stop-solution, producing nonflammable glue named CENbinder and series of boards with it, named CENboard. We developed CENbinder by our own technology to produce and supply.

Types of CENBoard: MDF board, particle board, OSB, etc.



Company History



Our Products Technology introduction

Principle of technology for CENBinder



Unequaled technology for nonflammable material

Jinmyung's CENbinder by self-development optimized for eco-friendly and nonflammable building materials, especially for wood products like MDF, PB, OSB and etc.

Eco-friendly ionized combination mechanism

CENbinder is an unique 3 in 1 system of self ionizing, bonding and curing function, not using any of chemical material like urea and melamin resin harmful to human.

Ionizing mechanism of CENBinder

01

Mineral Inorganic Materials

manganese, phosphorous acid, sodium, sodium chloride...

02

Mineral Solution(liquid)

active liquid as catalyst
inorganic salts
active minerals

03

Ionic Reaction

Inorganic, organic,
active liquid,
active mineral

04

Bonding and Curing

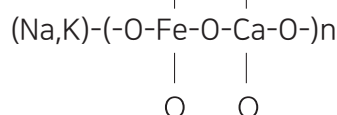
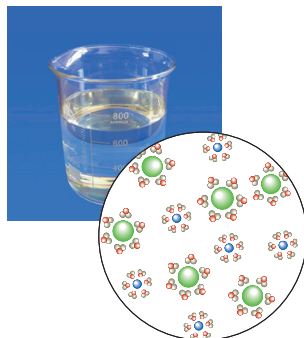
combination with various materials wooden fiber, corn stalk, wheat stand, rice straw, coal ash, ocher, ionic materials...

Mineral Powder

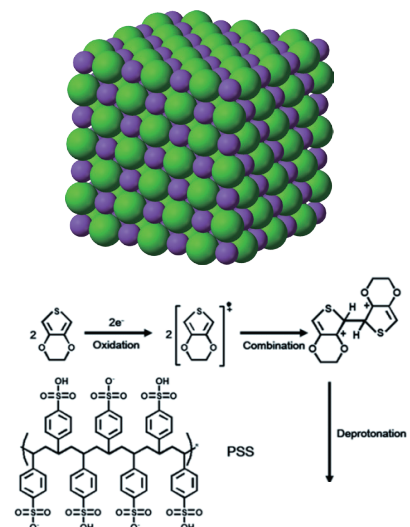


- Fe_2O_3 , CaO
- $4n\text{H}_2\text{O} + (\text{Na}^+, \text{K}^+)$

Mineral Liquid



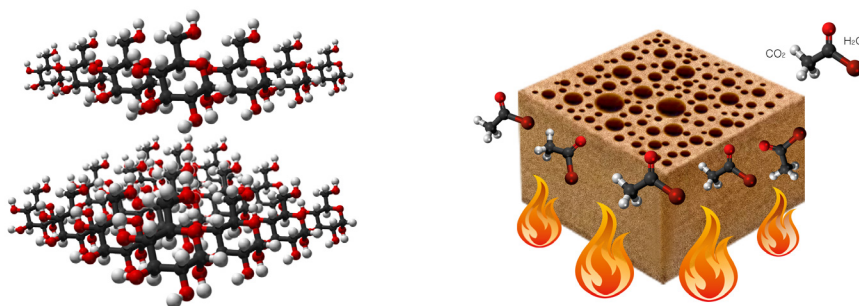
Ionic Equation



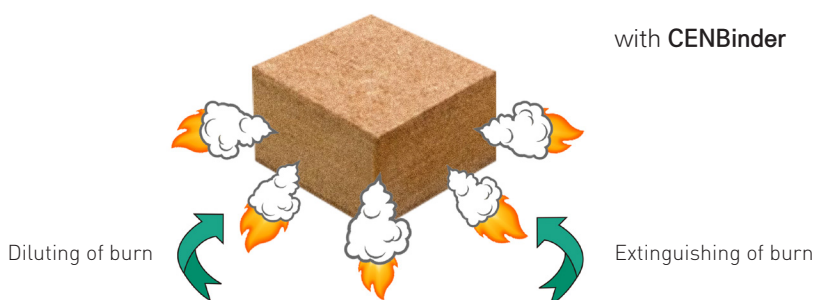
Principle of CENbinder's nonflammable function

Blocking easy carbonized properties of wood to protect igniting, flaming, smok emitting.

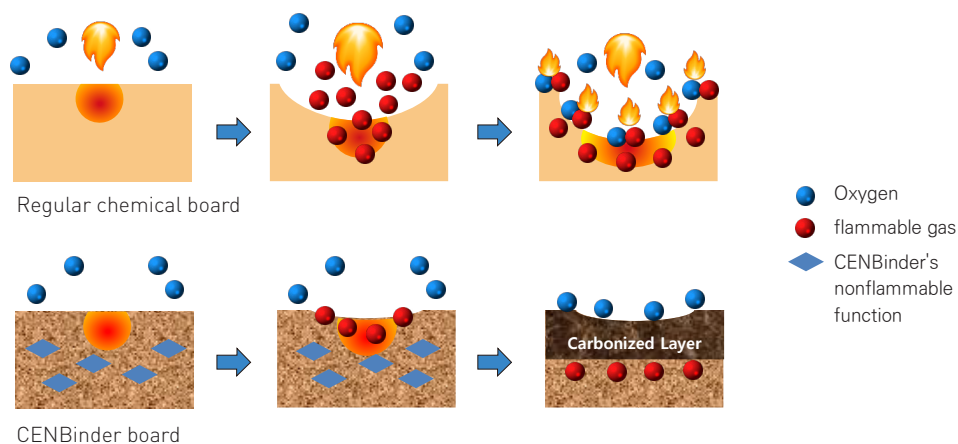
Controlling of free radical(polar molecule, atom)'s chain reaction and maintaining flash point highly by generating of combustion gas(H₂O, CO₂..).



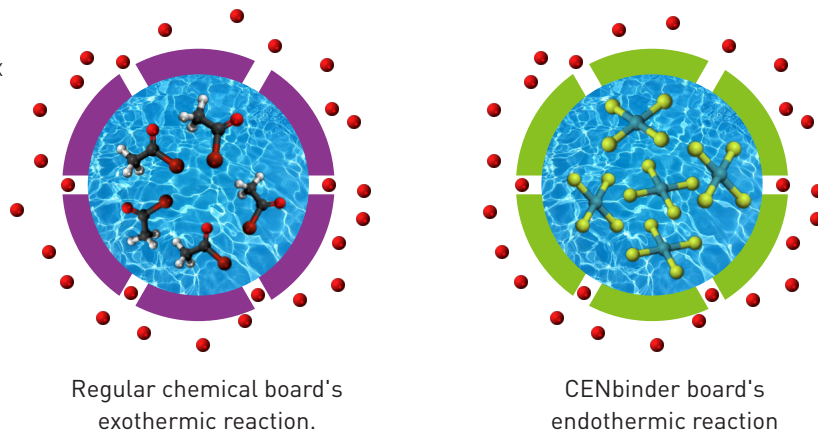
Creating fireproof function in combustion material and blocking oxygen and flame's approach.



Catalytic function by promoting carbonized states.



Lowering of burn temperature by endothermic reaction with matrix and blocking of flame.



CENBinder's nonflammable class division

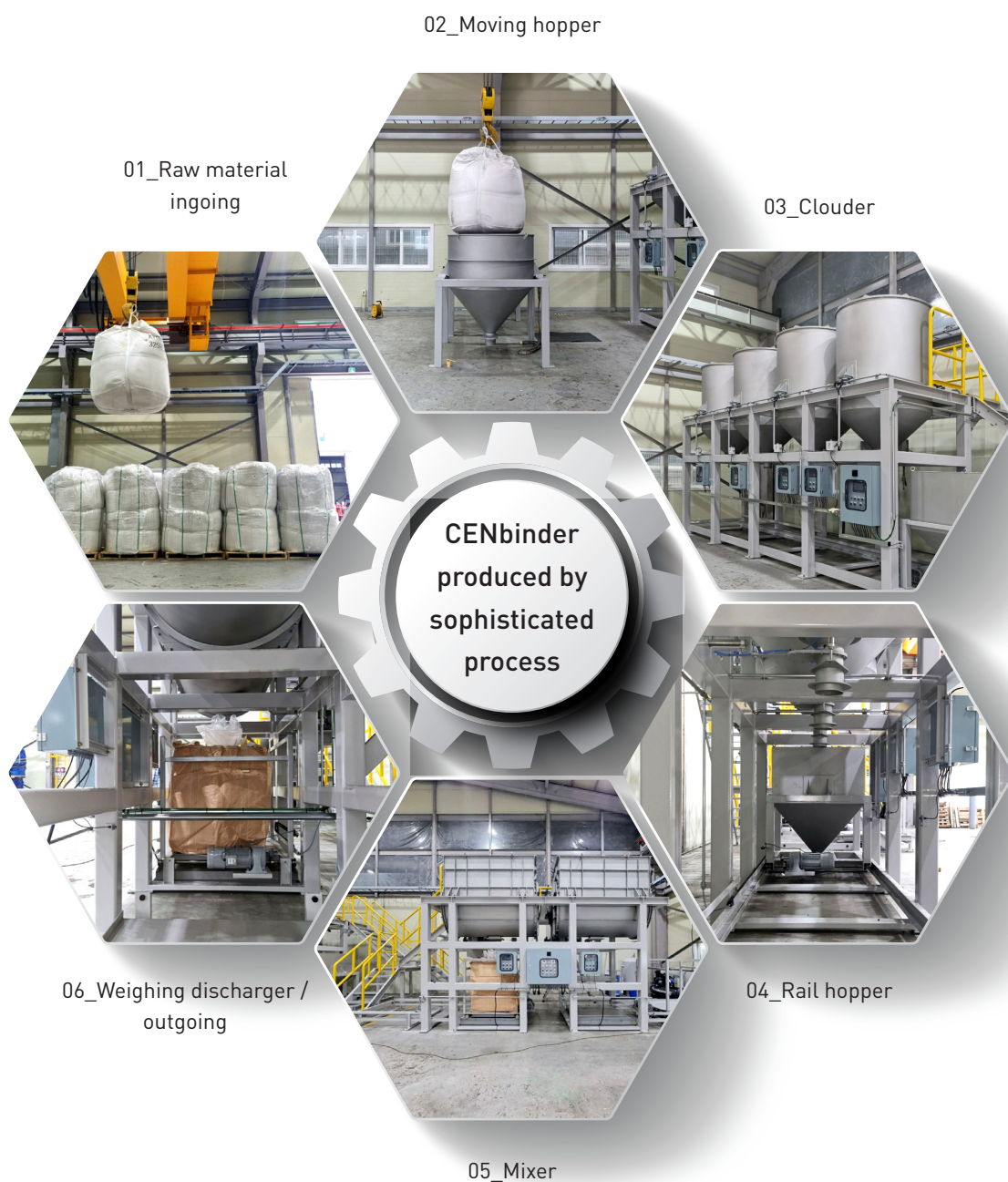
Verification of CENboard(MDF)'s nonflammable class standard test

Div.	Heat emission rate test conditions	Gas harmfulness test conditoinis	Test results
Class II	KS F ISO 5660-1 800°C 10 min total heat emission below 8MJ/m ²	KS F 2271 Mouse 15 min exposure above 9 min alive (total 8 mice)	Heat emission 4MJ/m ² -Passed Gas harmfulness 12 min-Passed
Class III	KS F ISO 5660-1 800°C 5 min total heat emission below 8MJ/m ²	KS F 2271 Mouse 15 min exposure above 9 min alive (total 8 mice)	Heat emission 4MJ/m ² -Passed Gas harmfulness 14 min-Passed
Class IV	Meckel burner 65mm 45° burning test flame,charcoal fire carbonized area, length	ASTM E 662 Smoke density below Dm[corr]400	45° burning test - Passed Smoke density Avr. 211 - Passed

CENBinder "You can upgrade your products to SE0 eco-friendly and nonflammable class."

Our Products Production process

CENBinder Production Line



CENBinder is the beginning of eco-friendly natural recycling.

Our Products Strong points

CENBoard's superial quality

CENBoard is the name of board made from CENbinder.

Tyes of CENBoard : MDF Board, Particle Board, OSB and etc.

Eco-friendly / SEO

nonflambale /
nontoxic

Economic

Soundproof

Low Carbon

Color boards

Insulation

Durability /
workability



CENboard properties

It is made of CENbinder, giving it nonflammable permeation into wood fiber, having inside of board also nonflammable also to block smoke emitting. It is divided by class II, III, IV.

CENboard(MDF)'s standard specification

Div.	Thickness mm	Size mm	Density kg/m ³
Class II	6 / 9 / 12 / 15 / 18	1220*2440, etc.	1100 ~ 1350
Class III	6 / 9 / 12 / 15 / 18	1220*2440, etc.	850 ~ 900
Class IV	6 / 9 / 12 / 15 / 18	1220*2440, etc.	550 ~ 750

* Details to be submitted by separate data sheets.

CENBoard(MDF)'s physical properties KS F 3200

Div.	physical properties	6mm	9mm	10mm	15mm	18mm
Class II	Moisture content	5%~13%				
	IB(Internal Bonding)	0.3 ≤	0.3 ≤	0.3 ≤	0.3 ≤	0.3 ≤
	Bending Strength	15 ≤	15 ≤	15 ≤	15 ≤	15 ≤
Class III	Moisture content	5%~13%				
	IB(Internal Bonding)	0.3 ≤	0.3 ≤	0.3 ≤	0.3 ≤	0.3 ≤
	Bending Strength	15 ≤	15 ≤	15 ≤	15 ≤	15 ≤
Class IV	Moisture content	5%~13%				
	IB(Internal Bonding)	0.3 ≤	0.3 ≤	0.3 ≤	0.3 ≤	0.3 ≤
	Bending Strength	15 ≤	15 ≤	15 ≤	15 ≤	15 ≤

* Details to be submitted by separate data sheets.

CENboard's application

Div.	Decoration Interior, Public, Commercial, Housing	Alternatives	CENboards' Strong Points
Class II	• High-rise building • Public facility • Green building • Green housing • APT, Officetel, Hotel • Soundproof material • Door, Molding, Room • Furniture, Interior..	• CRC board • MGO board • Wood wool board • Plaster board • Walling material • Art board • Allblue board • FR coating board • Glass board • Wool board	• heighten nonflammable • lower prices • heighten eco-friendly • lower nontoxic • lower carbon • shorter construction Be with CENBoard!
Class III			
Class IV			

Comparative Test of CENboard

Nonflammable Test of Regular MDF board



Nonflammable test of CENboard(MDF)



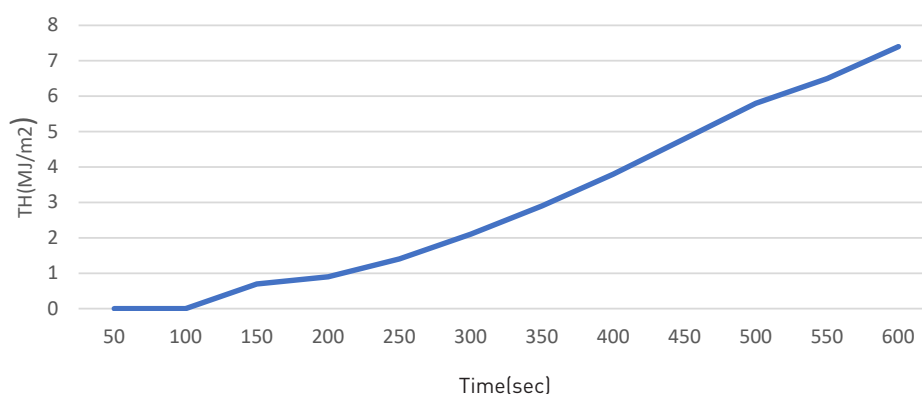
CENboard prevents fire enlarging, smoke emitting, and protects human lives.

CENboard(MDF)'s nonflammable Class II standard test

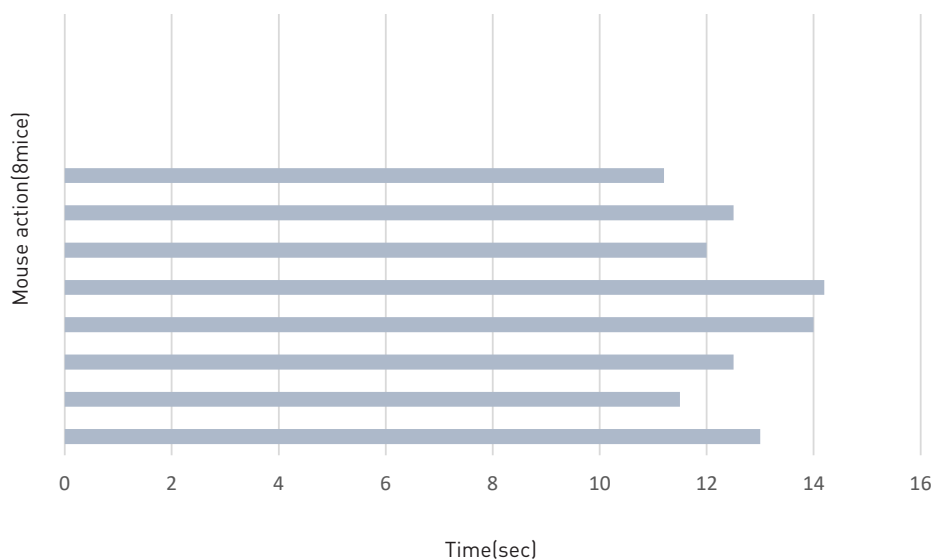
CENboard(MDF) made of CENbinder

Div.	Eco-friendly SE0 test conditons	Heat emission rate test conditions	Gas harmfulness test conditoinis	Test results
Class II	KSM 1998:2017 Formaldehyde Emission(Avr., Max.) below 0.35mg/L	KS F ISO 5660-1 800℃ 10 min total heat emission below 8MJ/m ²	KS F 2271 Mouse 15 min exposure above 9 min alive (total 8 mice)	[Heat emission] 7.4MJ/m ² - Passed [Gas harmfulness] 12 min-Passed [Formaldehyde-SE0] 0.1mg/L - Passed

Heat emission KS F ISO 5660-1



Gas harmfulness KS F 2271

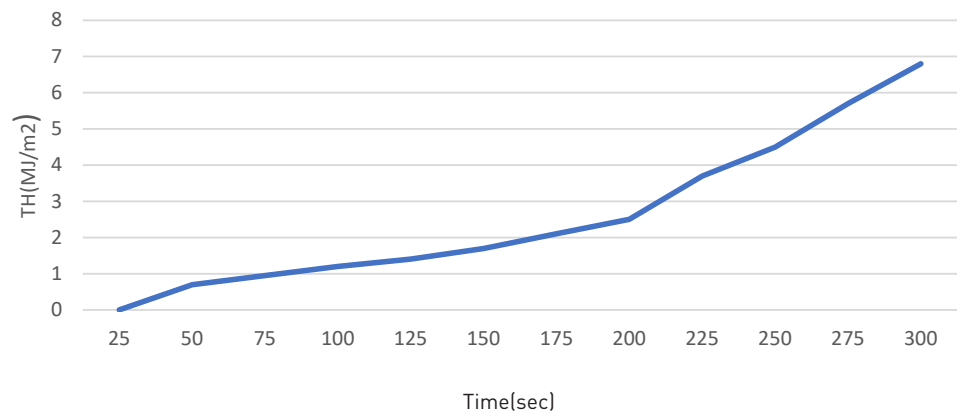


CENboard(MDF)'s nonflammable Class III standard test

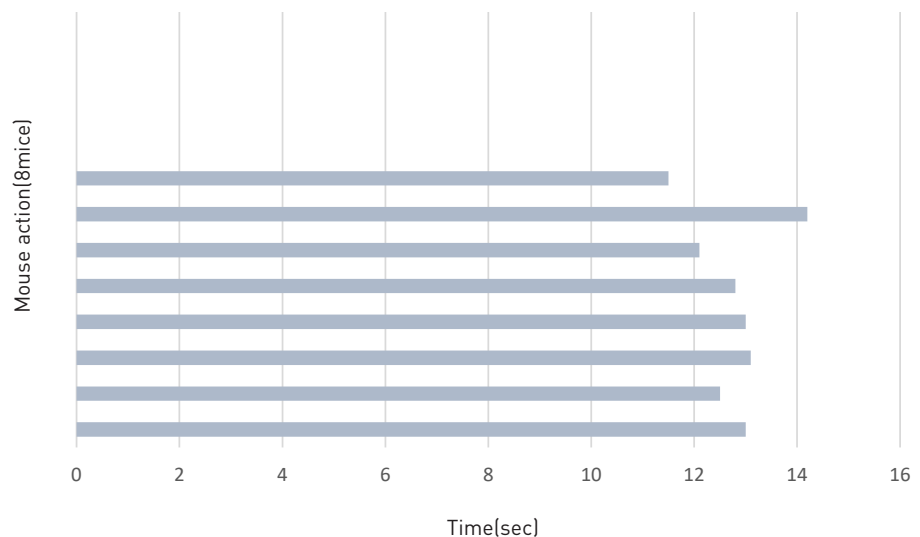
CENboard(MDF) made of CENbinder

Div.	Eco-friendly SE0 test condions	Heat emission rate test conditions	Gas harmfulness test conditoins	Test results
Class III	KSM 1998:2017 Formaldehyde Emission(Avr., Max.) below 0.35mg/L	KS F ISO 5660-1 800°C 5 min total heat emission below 8MJ/m ²	KS F 2271 Mouse 15 min exposure above 9 min alive (total 8 mice)	[Heat emission] 4MJ/m ² - Passed [Gas harmfulness] 14 min-Passed [Formaldehyde-SE0] 0.1mg/L - Passed

Heat emission KS F ISO 5660-1



Gas harmfulness KS F 2271



CENboard(MDF)'s nonflammable Class IV standard test

CENboard(MDF) made of CENbinder

Div.	Eco-friendly SE0 test conditons	Heat emission rate test conditions	Gas harmfulness test conditons	Test results
Class IV	KSM 1998:2017 Formaldehyde Emission(Avr., Max.) below 0.35mg/L	Meckel burner 65mm 45° burning test flame,charcoal fire carbonized area, length	ASTM E 662 Smoke density below Dm(corr)400	45° burning test - Passed [Smoke density] Avr. 211 - Passed [Formaldehyde-SE0] 0.1mg/L - Passed

45° Burning Test

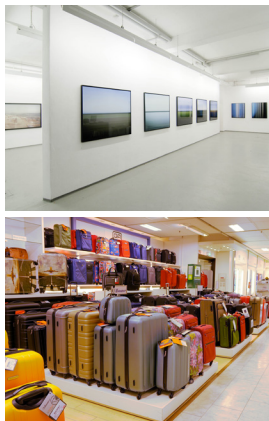
Test Items		Standard Spec.	Test Results		
			1	2	3
45° Burning Test	Remained flame	below 10 sec	0.0 sec	0.0 sec	0.0 sec
	Remained charcoal fire	below 30 sec	0.0 sec	0.0 sec	0.0 sec
	Carbonized size	below 50 cm ²	16.6 cm ²	14.7 cm ²	24.0 cm ²
	Carbonized length	below 20cm	6.4 cm	5.6cm	6.9 cm

Smoke Desity Test

Test Item	Standard Spec.	Test Results			Remarks
		1	2	3	
Smoke Density Test	below Dm(corr)400	209.4	166.7	259.7	ASTM E 662 25 kW/m ² Flaming mode

Application of CENboards

Commercial Buildings – mainly used to prevent fire in public facilities



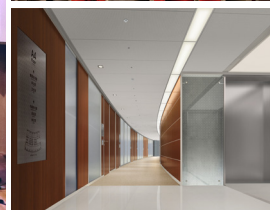
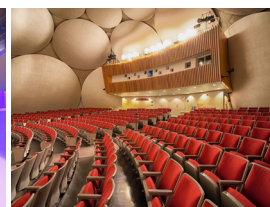
Houses, Accommodations - APT, Officetel, Hotel



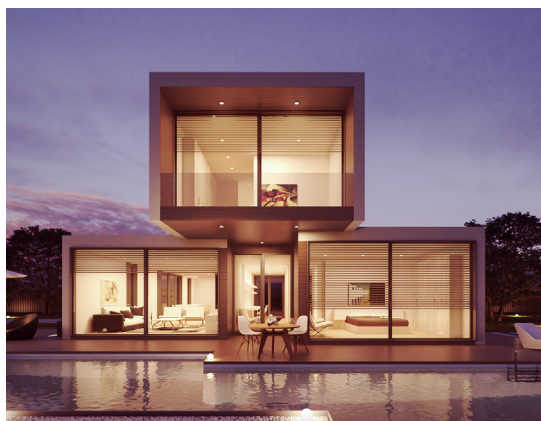
High-rised buildings office spaces, meeting rooms



Indoor soundproof - lobby, music room, aisle, etc.



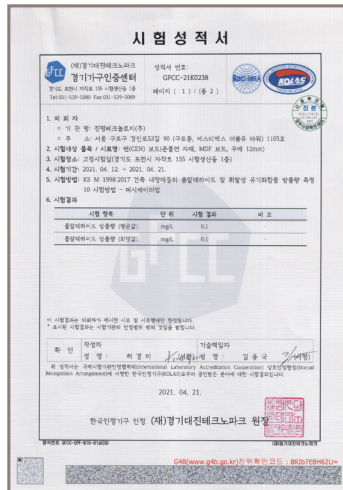
Eco-friendly green houses and buildings



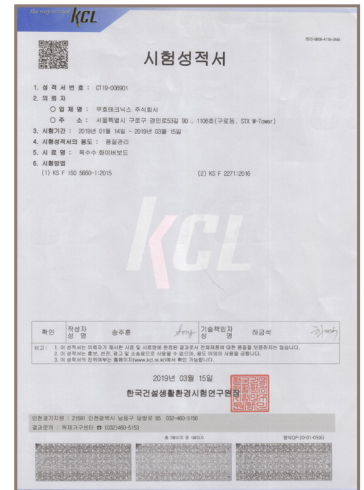
CENBoard Test Certificates (KCL, KFI)



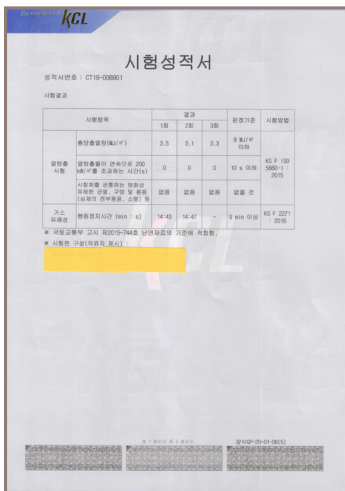
Patent Certificate



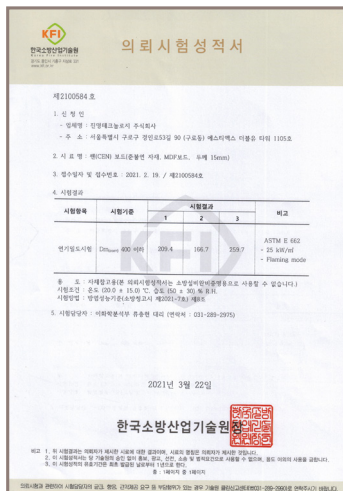
Eco-friendly Test, SE0 Class



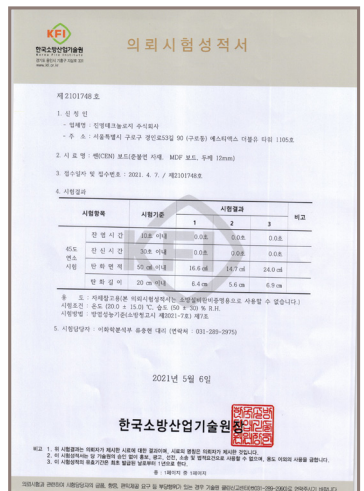
Nonflammable Test, Class III



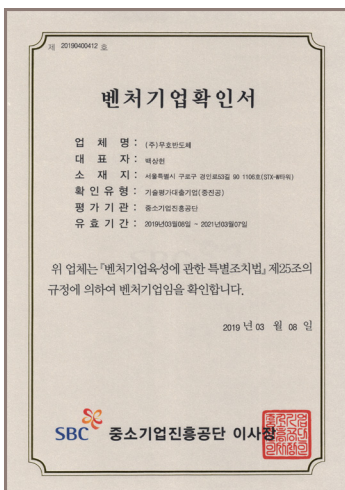
Nonflammable Test, Class III



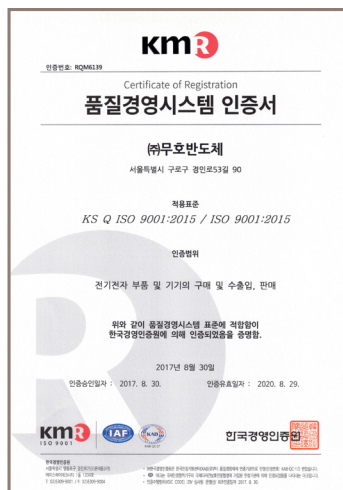
Nonflammable Test Class IV(Smoke Density)



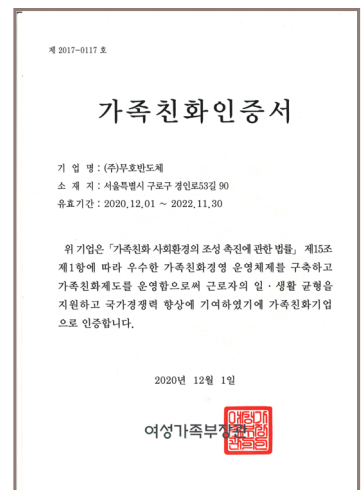
Nonflammable Test Class IV(45° Burning Test)



Venture Enterprise



Quality Management System



Family Friendly Firm

Carbon neutral

Eco-friendly

Nonflammable



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