SmartLam achieves 90% efficiency in production process and tracking with ZOHO Creator

SMARTLAM
| NORTH AMERICA |

About SmartLam

SmartLam North America is one of the first commercial manufacturers of cross-laminated timber (CLT) in the United States. They started out in 2012, and since then they have been providing an innovative construction solutions for customers globally. Cross-laminated timber (CLT) was invented in the early 1990s in Europe, and since then has become a widely used building material there. However, it's a fairly new product in North America which has increasingly gained traction among builders, engineers, and architects over the past decade. It's popular mainly because it is extremely durable, cost-effective, and compliant with current building codes.

Today, SmartLam is known as a **one-stop-shop for architects and developers.** They provide end-to-end project management services, from designing to engineering to producing custom solutions with premium grade CLT and supplying them to the project site on schedule. Each CLT component is individually manufactured and cut to the design requirements of the project, allowing buildings to be erected 75% faster, and in a LEGO-like way. This creates a lot of value-add in terms of reducing on-site construction labor, time, and waste.

Recently, we had the opportunity to connect with Charles B. Gales, Strategic Business Analyst at SmartLam, and also the man who single-handedly built a custom manufacturing solution on Zoho Creator that helps them manage their entire production process.

Read on to find out how SmartLam kickstarted their journey with Zoho Creator, and their experience with the platform so far.
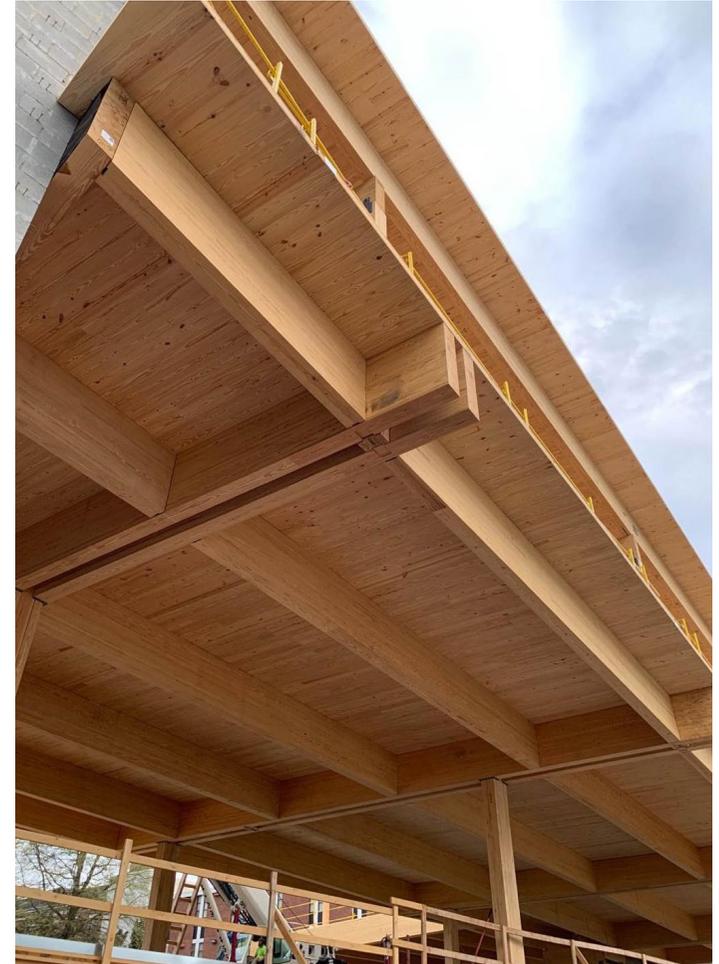
How did SmartLam handle processes before Zoho Creator?

SmartLam adapted Zoho CRM in 2017 to manage their sales pipeline and all of their customer inquiries. Before that, they used Excel spreadsheets and paper to manage data related to their production and inventory process. As the company grew and expanded to a second location, the old way of managing systems proved insufficient. Recognizing the inefficiency of their system, Charles evaluated a few material resource planning (MRP) systems, as well as a couple of off-the-shelf construction management solutions like **Epicore and Procore,** but realized they were rigid and more suitable for commodity-type production settings that wouldn't suit their process, as it can be very complex.

In 2018 SmartLam realized that, to scale their business, they needed a manufacturing solution that would be flexible enough to accommodate their business model, and keep up with company growth.
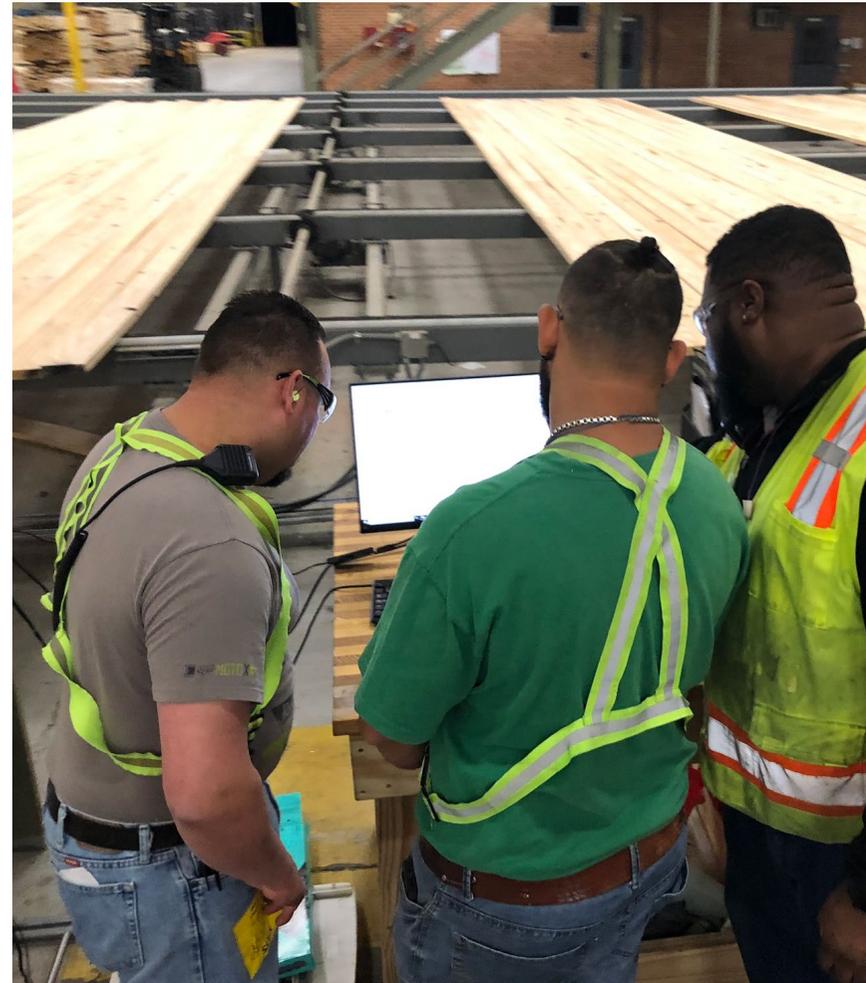
> "We wanted a solution that we could build, from the bottom up, based on our unique production process, and organize and store all our data on it."

Charles B. Gale, Strategic Business Analyst

Why did they choose Zoho Creator?

SmartLam was a relatively young company and was working to figure out better ways to manage their processes as they grew, to ensure they could continue to deliver projects on time and on budget. They were looking for a platform that would help them streamline their production process from start to finish.

> We evaluated Netsuite and other enterprise-level suites at the beginning and decided Zoho Creator was still a better solution for our operations. A lot of the ERP systems that we looked at were robust, but not very flexible. They were out-of-the-box solutions—you had to build your process around the platform. But, by using Zoho Creator, we could build the platform around our process.

Charles B. Gale, Strategic Business Analyst

Robust, cloud platform to build custom applications

Flexibility to scale as you grow

Affordable pricing for growing businesses

Besides the flexibility factor, SmartLam, chose Creator as it was a comprehensive, cloud platform that could help them digitize processes at speed and wasn't expensive compared to the manufacturing systems available on the market.

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Over the last couple of years, Zoho Creator has eliminated the majority of Excel spreadsheets that we used to manage our data on, and has really provided us as the backbone for driving our business growth on the production and inventory side.

Charles B. Gale, Strategic Business Analyst

# How did Zoho Creator exceed their expectations ?

Over the last two years, Charles has developed two comprehensive custom applications in-house, with zero dependency on developers. At first, based on their requirements, he developed a **complete custom manufacturing solution in just 30 days** that helps them take care of their production cycle, right from project creation to shipping the panel to the project site.

The team at SmartLam were immediately able to see the difference and ease with which they were able to get things done. From capturing external data directly in the Creator-based application, to managing every stage of the production, to accessing real-time data from multiple departments, this instant visibility has allowed them to ensure precise, on-time deliveries no matter how much the company grows.

Recently, Charles also developed an inventory management application for both their production facilities, as they realized they lacked real-time visibility of their inventory. They didn't have an accurate account of what was in stock, what needed to be ordered, the size (both quantity and type) of that order, and what needed to be replenished, which often resulted in inconsistent inventory levels and wastage.

Armed with these two apps, SmartLam has more time on hand to focus on improving their sales growth and always innovating ways to improve. Read on to find out the other benefits that SmartLam achieved after implementing Zoho Creator:
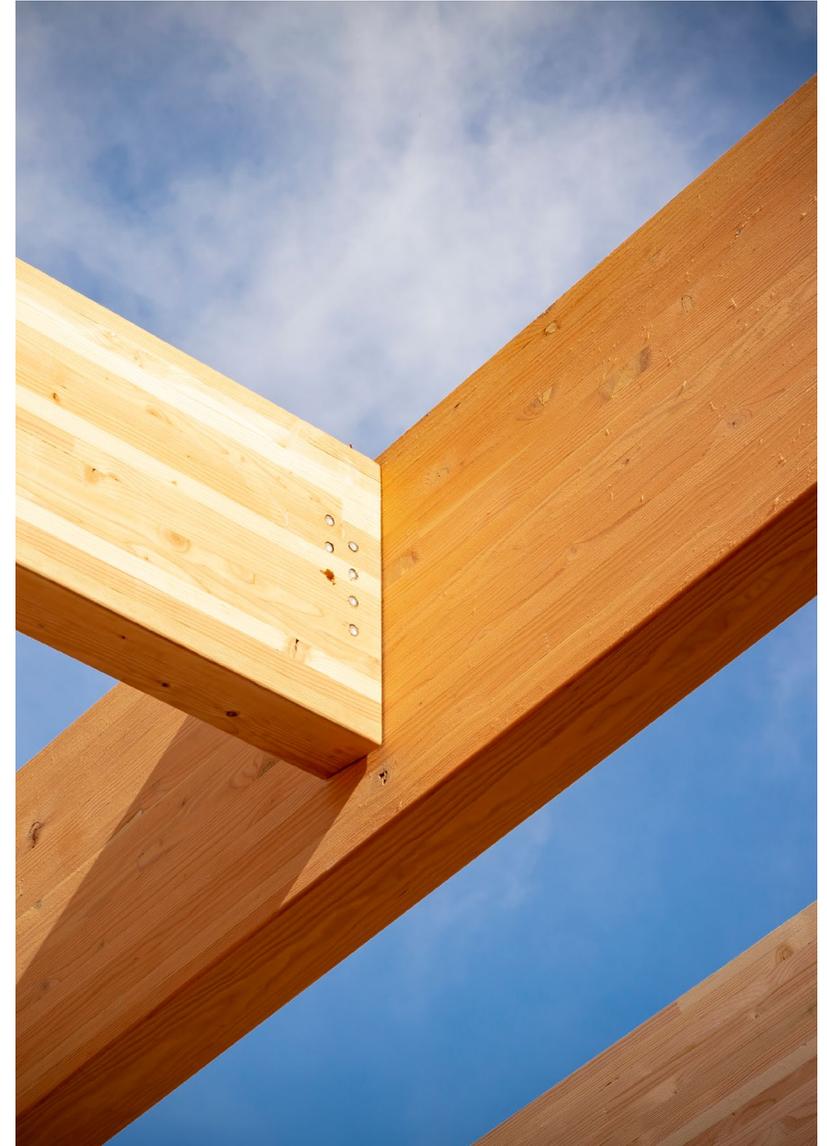
Better visibility

With the Zoho Creator apps in place, SmartLam is now able to identify major business KPIs to help drive efficiency, accuracy, and confidence in their process. Zoho captures all production-related recipe volumes, scheduling, completion dates and times, and QA/QC data for each item and the project as a whole. This data is invaluable and feeds finance, operations, and QC departments across the company to monitor daily/monthly/yearly manufacturing patterns and goals.

Real-time inventory overview

Once they built the inventory management app for both facilities, they had better transparency of their inventory. They now know exactly what they're using on a monthly basis, stock on hand, and are able to order materials much more accurately now. Plus, with better insights on material and production costs, they're able to precisely price their products.

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I like to know exactly where each of our projects is at in the process to ensure we can achieve the best marketing and coverage for each in perfect timing, and all I need to do is log in, and everything is right there in front of me.

Alexandra Hainsworth, Marketing Specialist, SmartLam

Custom reporting

Creator provided them the ability to represent every layer of data in many different ways, which has been a great positive for them. The Kanban report, specially, has been extremely valuable in tracking every stage of the production process in real time.

Work on-the-go

The quality assurance team at SmartLam is now able to verify details such as the size of the finished product, appearance requirements, and product labelling, to check if it matches the engineering specifications, and fill in forms on the go using the Creator app on their iPads. Also, the mobile app gives different teams on the floor the ability to check the product flow in the Kanban report and update its status in real time, while working on the products.

Centralized data management

From a business point of view, SmartLam finds it extremely valuable to be able to access and manage all their business data in one place. The interconnectivity between the many different Zoho apps (CRM, Creator, and Analytics) SmartLam uses has helped improve efficiency and accountability throughout the organization.

Increase in production time through automation

When a CLT panel is built, it take a certain "recipe" of the number of boards required to complete the configuration. The total number of lamellas varies depending on the thickness, length and width of the specified panel. Prior to Zoho Creator, the calculations for the panel recipe were done manually. Now, all product recipes are created in half the time and passed on to the production teams much faster. This has helped to increase communication and decrease delays in information transfer from engineering to design to production.

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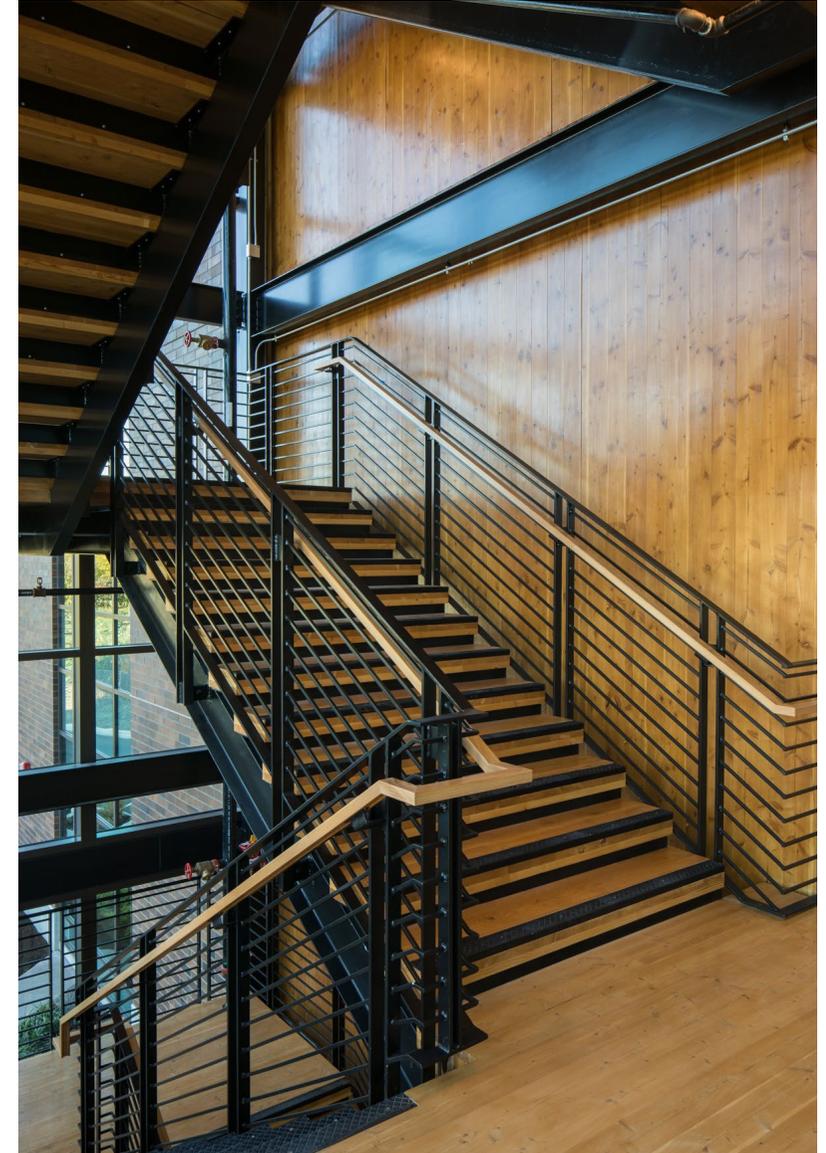
After we implemented Zoho Creator, we noticed the communication transparency between the two plants, and our corporate office is phenomenal, and the processes are much more streamlined now. We couldn't have done it without Zoho Creator.

Pete Krona, Plant Manager, SmartLam

Key benefits

Cost savings of **$250,000** over 2 years

90% reduction in errors

90% increase in productivity

10% increase in profits

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We were once a small business with 30 employees in sales, engineering, design and only one small manufacturing plant. Over the years, as we grew, Zoho has provided us with the ability to scale and adapt to our ever changing business needs, drive consistency, and communication throughout the whole organization, and level the playing field with our key competitors.

Charles B. Gale, Strategic Business Analyst

From project creation to shipping, all managed on Zoho Creator

From new project creation to shipping the materials to the client site, there are 10 stages before the final product is delivered, let's take a look at them, step by step:

01 Project creation

This is the first stage of the production process. The contract is signed by the client and transferred from Zoho CRM to Zoho Creator, and the SmartLam team is given a go ahead to start the engineering/design process.

02 Panel import

Once the engineering & design process is completed with the customer, the production documents and panel requirements are received in various formats. They're then converted to custom production recipes in Zoho Creator to create the BOM of each of these individual products, and for the project as a whole.

03   Production scheduling

Each parent panel is scheduled and prepped for production using a schedule report. This is done by project for each day/week/month that's planned to produce.

04   Finger joint

Next, is the finger joint process, where lumber of various size is finger jointed to make lamellas of various lengths to match the panel recipe. All the BOM information is provided in a Kanban report on Zoho Creator, which is used by the operator to verify what material to use, lengths of each lamella, and piece counts.

05   Planer

Once the lumber is finger jointed, it's passed through the planer to smooth all four surfaces and get the desired thickness and width based on the panel recipe. Then, this is passed on from one production stage to the next in the Kanban.

06 **Press**

When the package of lamellas is ready for assembly, the press station is in charge of layup and pressing, using the required parameters in Zoho Creator to set up the machine with the required dimensions. The press operator collects various production/QC stats at this stage using several forms, and updates various data fields. They also print out tags by using the Zoho Creator record summary feature for each product, to help them track the product in the future.

07 **CNC**

After a panel is pressed and is in a parent panel form, it's ready for the CNC. The CNC is a machine that cuts the panels from the original parent panel to a specific pre-designed size. This machine cuts the panel to the final dimensions and cuts windows, doors, or any other cutouts based on the design documents.

08 **Finishing**

One of the last steps of completing a panel is finishing. This includes filling panel defects with epoxy, sanding to the appropriate finish, and coating with a wood sealer. Once these steps are completed, the panels are wrapped and staged with a unique ID for truck loading and shipment.

09 Quality assurance

During panel production, the QA team verifies if all the processes were completed, and inspects all products to ensure proper dimensions, tolerances, and identification of each product. This is all recorded in Zoho Creator using various subforms and fields. In case the QA team finds any irregularities, they attach a picture and add notes to inform the relevant teams.

10 Shipping

All bills of lading (BOL) and shipping schedules are recorded in Zoho Creator, and the products are shipped based on a loading sequence. This ensures when the product arrives at the project site, the contractor can easily unload the panel from the truck to the building in one single motion, often reducing building timelines considerably.

> If I were to estimate our benefit, it would be close to a quarter of a million dollars over the last two years. The savings are hard to quantify but tremendous. Just the amount of staff we haven't needed to hire, reduction in manufacturing errors, supply efficiency, and cross company communication alone could account for this. I can tell you that, without Zoho, we would not be where we are at today. Now we have over 100 employees, and two recently built state-of-the-art manufacturing facilities of which Zoho is and was integral in our success.

Charles B. Gale, Strategic Business Analyst

A peek into their application

C.Falls - Production V2

C.Falls - Production v2

| Dashboard/Reports | Projects | Products | CLT | Schedule | Production | QC | Finishing / QA | Shipping | Production QC Stats | Forms |

Projects List *

	Image	Year	Project ...	Project Name	Project Files	Production Start ...	Estimated Shipping ...	Estimated Parent Panel...
In Production								
		21	21-M002	Mat Inv		01-04-21	01-15-21	50
		20	20-069	Taylorsville Liquor Store		12-14-20	01-04-21	24
		20	20-298	Maclac		12-01-20	01-08-21	9
		20	20-347	Sierra Institute Biomass		11-30-20	12-07-20	3
		20	20-RD07	V5M1 Fire Test part 2		11-30-20	12-03-20	1
								87
Complete								
		20	20-254	SLCDA Glycol Wildlife		11-19-20	12-07-20	31
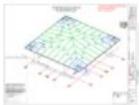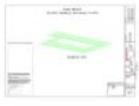
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C.Falls - Production V2

C.Falls - Production v2

| | Dashboard/Reports | Projects | Products | CLT | Schedule | Production | QC | Finishing / QA | Shipping | Production QC Stats | Form |

CLT Schedule *˅

	Panel ID	Project Name	Proje...	Daily...	Production Sta...	Panel Sta...	Press Completion ...	Press Sched
☐ 01-06-21								
	21-M002 - 29 - CLT_3aMAT_3.936x95.00x520.00	Mat Inv	29.00		Fingerjoint	WIP		01-06-21
	21-M002 - 28 - CLT_3aMAT_3.936x95.00x520.00	Mat Inv	28.00		Press	WIP	01-06-21 15:06:01	01-06-21
	21-M002 - 27 - CLT_3aMAT_3.936x95.00x520.00	Mat Inv	27.00		Fingerjoint	WIP		01-06-21
	21-M002 - 26 - CLT_3aMAT_3.936x95.00x520.00	Mat Inv	26.00		Press	WIP	01-06-21 15:05:59	01-06-21
	21-M002 - 25 - CLT_3aMAT_3.936x95.00x520.00	Mat Inv	25.00		CNC Prep	WIP	01-06-21 13:51:59	01-06-21
	21-M002 - 24 - CLT_3aMAT_3.936x95.00x520.00	Mat Inv	24.00		CNC Prep	WIP	01-06-21 13:51:57	01-06-21
	21-M002 - 23 - CLT_3aMAT_3.936x95.00x520.00	Mat Inv	23.00		CNC Prep	WIP	01-06-21 11:42:36	01-06-21
	21-M002 - 22 - CLT_3aMAT_3.936x95.00x520.00	Mat Inv	22.00		CNC Prep	WIP	01-06-21 11:42:32	01-06-21
	21-M002 - 21 - CLT_3aMAT_3.936x95.00x520.00	Mat Inv	21.00		CNC Prep	WIP	01-06-21 11:42:29	01-06-21
	21-M002 - 20 - CLT_3aMAT_3.936x95.00x520.00	Mat Inv	20.00		CNC Prep	WIP	01-06-21 09:06:13	01-06-21
	21-M002 - 19 - CLT_3aMAT_3.936x95.00x520.00	Mat Inv	19.00		CNC Prep	WIP	01-06-21 09:06:10	01-06-21
	21-M002 - 18 - CLT_3aMAT_3.936x95.00x520.00	Mat Inv	18.00		CNC Prep	WIP	01-06-21 09:06:08	01-06-21
☐ 01-07-21								
	21-M002 - 43 - CLT_3aMAT_3.936x95.00x520.00	Mat Inv	43.00		Parents Scheduled	Scheduled		01-07-21
	21-M002 - 42 - CLT_3aMAT_3.936x95.00x520.00	Mat Inv	42.00		Parents Scheduled	Scheduled		01-07-21
	21-M002 - 41 - CLT_3aMAT_3.936x95.00x520.00	Mat Inv	41.00		Parents Scheduled	Scheduled		01-07-21

C.Falls - Production V2

C.Falls - Production v2

Dashboard/Reports | Projects | Products | CLT | Schedule | Production

Panel QC List

👁	☐	Press Completion Date/... ▾	QC Process St... ▾	Panel QC St... ▾	Test St... ▾	Panel ID
		12-17-20 11:15:56	In Que	Pass	Restest	20-069 - 005 - CLT_
		12-17-20 11:15:56	In Que	Pass	Restest	20-069 - 005 - CLT_
		12-17-20 09:26:53	In Que	Pass	Initial	20-069 - 022 - CLT_
		12-17-20 08:11:54	In Que	Pass	Initial	20-069 - 014 - CLT_
		12-17-20 06:51:59	In Que	Pass	Initial	20-069 - 003 - CLT_

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Test Stage

Panel QC Status

Panel ID

Retest Panel

Is Replacement Panel

Is APA Panel

Failed Notes

Test Notes

QC Panel Sample Image

Retest - QC Panel Sample Image

Shear Status

Shear Test Date

Total Shear Avg (%)

MC % Pre Test

Shear Image 1

About Zoho Creator

Running a business is no mean feat, and we believe we can help. Zoho Creator is a leading low-code application development platform that empowers business users across industries to create multiplatform applications that cater to their unique requirements. You don't have to be a pro-developer, nor do you need a large capital outlay to get started with Zoho Creator. Just sign up and start building the apps you need, and scale as your business grows!

Our Customers

ZOHO Creator

www.zoho.com/creator/

We'd love to talk! Reach out to us:

hello@zohocreator.com