

CASE STUDY - FOR IMMEDIATE RELEASE

NEW BROOM SWEEPS CLEAN AT LAFARGE TARMAC

Friday 11th June 2015, Dungannon, Northern Ireland – Lafarge Tarmac is the UK's leading sustainable building materials and construction solutions business. Its innovative products and solutions have contributed to some of the UK's biggest construction projects, and it has an unrivalled supply and distribution network that includes over 330 sites. Lafarge Tarmac products meet the highest standards of sustainability and performance, as you would expect from a market leader. They are responsibly sourced and certified to BES 6001.

World's First AggreSand™ 206

Lafarge Tarmac's Broom South, Bedfordshire, UK, site now boosts the world's first Terex Washing Systems (TWS) AggreSand™ 206 modular wash plant seamlessly combined with the AggreScrub™ 150. Iain Walker, Global Sales Director, TWS commented: "Lafarge Tarmac installation at Broom represents another significant step forward for TWS. Not only does it showcase our new AggreSand™ 206 system, it also combines this with an AggreScrub™ 150 to consistently deliver premium grade sand and aggregates. This project demonstrates how TWS work effectively with our distributors to serve the specific needs of a key client and provides a true blueprint for high quality, high capacity washing systems for a wide range of material types".

Seamlessly Combined

A recent open day at Broom South provided the first ever opportunity for customers to view the AggreSand™ 206 and the AggreScrub™ 150 seamlessly combined, processing in excess of 350tph and producing 3 aggregates and 2 sands.

Lafarge Tarmac Regional Operations Director Andy Bate commented: "This plant has the capability to process double the capacity of the previous fixed plant. It boosts a very innovative and compact design and

gives us the ability, especially on sand production, to have ultimate flexibility, so we can make two sands at varying cuts. We have a 0-4mm concrete sand and a 0-2mm fine sand.”

Bate, added “The criteria we considered for the Broom site for the processing plant was one of high capacity, high efficiency and something that was within our planning constraints, so it had to be something that was pretty low level with a low ground pressure footprint. What we got with TWS and Duo PLC was a highly efficient plant offering ultimate flexibility and the ability to produce the variations and high specification we needed. Working in conjunction with TWS and Duo PLC allowed us to deliver a high capacity, cost effective solution and ultimately meet the varying market needs. We are seeing an increasing market demand in this area but when the need arises we can take this model and transfer it anywhere within our industrial footprint across Lafarge Tarmac.”

Alex Moss, Managing Director, Duo PLC, commented “This plant has allowed us to develop a solution with the client and work as one. Critical to this process was understanding what their specific demands were so we could bring to the table a solution to meet their requirements and variations. Acquiring information on their feed material, end user and market demands was fundamental to develop a solution specific for them. The AggreSand™ 206 and AggreScrub™ 150 set-up allows you to change with the market and very quickly you can move these plants from site to site if required, it is totally self-contained and has the flexibility to develop where you want to go as the market trends change. This plant is the ideal solution for sites that were previously not economically viable due to cost of penalties. This plant makes many more sites and materials bring value to the market place.”

1000’S of Tons

The AggreSand™ concept pre-wired & pre-plumbed with quick installation was particularly intriguing to Lafarge Tarmac as a solution to their specific needs, far removed from other wash plant installations they experienced in the past. The material to be processed at Broom required scrubbing in order to produce a clean aggregate suitable for drainage, decorative stone and concrete production. The AggreSand™ 165 was originally selected and installed in June 2014 and had been producing 1000’s of tons of quality clean

aggregate and two in spec mortar and concrete sands. The continued strengthening of the UK aggregate market prompted Lafarge Tarmac management to approach Duo Plc once more to investigate how production could be increased further. Lafarge Tarmac particularly liked the modular concept of the AggreSand™, however they required increased production to meet the constantly growing demand. TWS had just announced details of the larger capacity AggreSand™ 206 as well as the AggreScrub™ 150, which was set to be the next ideal combined solution for Lafarge Tarmac's specific requirements.

Increased Production Capacity

TWS Applications and Design engineers, together with Duo Plc, visited the Broom site to meet with management to identify and suggest a plant that would address their specific needs. The AggreScrub™ 150 offers increased production capacity and increased levels of access in comparison to the previous PS120 range. The seamless combination of the AggreSand™ 206 and AggreScrub™ 150 was particularly appealing to Lafarge Tarmac in terms of access, serviceability and modularity. The recognized efficiencies and productivity of the previously installed AggreSand™ 165 at their site, combined with the additional capabilities of the larger capacity AggreSand™ 206, Lafarge Tarmac opted for this along with the AggreScrub™ 150 to provide the extra required capacity.

The larger capacity AggreSand™ 206 plant is now installed and fully commissioned at Broom, Bedfordshire, UK and is producing in excess of 350tph of three quality aggregates and two in spec sands. The plant consists of a bespoke feed system which can either be fed by wheel loader via a 12' vibrating grid, or by Lafarge Tarmac's existing land conveyor and radial feed conveyor. The feeder including the vibrating grid is electric hydraulically powered.

Reaching New Heights

The main inclined feed conveyor is 23m long and is inclined at 18° and is 1050mm wide. The conveyor is driven by two 11Kw electric motors and Bonfiglioli® gearboxes mounted on either side of the drive drum. This set up not only provides balance to the conveyor but also gives enhanced torque characteristics. Lafarge Tarmac specified the use of cooper split bearings on this conveyor for ease of maintenance. The

inclined feed conveyor has an integrated wash box complete with spray bar which pre-soaks the feed material before it reaches the rinsing screen.

3 Decks

The AggreSand™ 206 at Broom is a three deck version which utilizes ten individually controlled spray bars on each deck. The two bearing screen is fitted with polyurethane modular media on all three decks. The top deck acts as a protection deck removing any material above 80mm. The middle deck is a 40mm passing deck while the bottom deck is split, 2mm and 5mm to produce the required two sands. It is fitted with two 'stumpy' conveyors which deliver the over and mid-size material to two 65' stockpiling conveyors. Chute-work on the AggreSand™ 206 employs the now well tested dead-box system which results in rock on rock set-up which is proving to give excellent wear properties.

Sand Fit For A Castle

The feed material at this site has a high sand to stone ratio which translated to a sand throughput approaching 350tph. TWS provided an innovative solution whereby the AggreSand™ single grade 200tph sand plant produces the concrete sand while a TWS FM 120C is utilized alongside the AggreSand™ 206 to produce the masonry sand. Currently the AggreSand™ 206 single grade sand plant which consists of one 45Kw 250/200 pump and two G4-660mm cyclones is producing clean in spec concrete sand. The FM 120 which has a 200/150 30Kw pump and one G4-660mm cyclone is producing in spec mortar sand. These two sands are produced on a split bottom deck on the AggreSand™ aggregate screen consisting of 2mm and 5mm apertures. A specially designed rubber-lined catchbox allows blending to take place so that an acceptable coarse and fine sand ratio can be achieved. The fine material is captured in one section of the two grade catchbox and piped to the FM120C's sump tank. The material between 40 and 80mm is washed and stockpiled and crushed periodically. The material between 5mm and 40mm is fed to the AggreScrub™ 150 for scrubbing and removal of clay conglomerates. The material to be scrubbed is fed via a specially extended (16m) conveyor which safely feeds this sticky material at 17⁰ to the AggreScrub™ 150.

Abrasive Scrubbing Action

The AggreScrub™ 150 consists of an 8m hull fitted with two rotating shafts fitted with 30mm abrasion resistant blades. The blades convey the material from the feed end of the scrub to the aggregate rinsing/sizing screen. As the material travels through the hull the abrasive action of the aggregate as it collides with other aggregate (stone on stone) scrubs it clean and breaks up any clay conglomerates which are then floated off through the back of the AggreScrub™. Any organics such as roots or plastics are also floated off to be dewatered over the AggreScrub's™ 6 x 2 trash screen. Underflow from the trash screen is received in a catchbox under the screen and then gravity fed to the sump tank under the hull.

Scrubbed aggregate exits the main discharge of the AggreScrub™ 150 to a 12x5 part rinsing screen. The initial section of this screen is fitted with spray bars to rinse off any sand / grit residues produced during scrubbing. The rinsed grit is captured in a partial catchbox under the screen and is piped to the sump tank below the hull to join the trash screen underflows. This sump tank is fitted with a 100/100 centrifugal pump which pumps this dirty water back to the AggreSand™ 206 sand plant to recover any sand and make maximum use of internal water. The two deck 12x5 screen is fitted with polyurethane modular media to produce 5-10mm, 10-20mm, and 20-40mm clean aggregate. The three clean grades of aggregate are stockpiled using three TC6532 conveyors.

Cutting Edge Control System

The control system for this specific AggreSand™ wash plant is stored in a centralized cabin on the site which is one of the options offered by TWS on all AggreSand™, alternatively the panel can be mounted onto the machine, all of which are pre-wired. The option selected by Lafarge Tarmac means that the plant is supplied wired to isolators and wired to the centralized control panel on site. This option exemplifies the flexibility of TWS and the AggreSand™ concept to suit individual customer needs or preferences.

Miles Dobson, Head of Manufacturing, Lafarge Tarmac, commented: "It has given us a great deal of flexibility in the market. We started here with a smaller plant again supplied by TWS and Duo PLC and after looking at the market and the changes, we opted for a larger plant that has allowed for more flexibility to better serve the market and demands. It's modular in design, so we can change the modules

and we also have the ability to add a larger sand plant if the market changes. Moreover on the back of that we have built a strong relationship with Duo PLC and TWS and are excited about further installations underway at other Lafarge Tarmac sites. The fantastic thing about the AggreSand™ is the modular design, allowing us to be flexible and fast in the market, it allows us to react quickly and in many ways, as we can see at this open day event, the proof is in the pudding, it was a very swift installation, running efficiently and is producing what we anticipated.”

Lafarge Tarmac commented “We are seeking to unlock value with the supply partners they work with in new creative ways, taking a fresh approach to the acquisition of new assets, and working on a total cost over the life of their assets. Securing innovation by working in conjunction with partners like TWS to ensure a sustainable supply chain, and the assurance of supply of a continuous quality product, that is always fit for purpose, has allowed benefits to be derived from the overall availability of the plant to the quality of the product being produced and sold to our customers.”

To find out more or to discuss specific washing requirements, contact us at TWS.Sales@terex.com or visit our dedicated website which provides an overview of the full product offering at www.terex.com/washing

About Terex

Terex Corporation is a **lifting and material handling solutions** company reporting in five business segments: Aerial Work Platforms, Construction, Cranes, Material Handling & Port Solutions and Materials Processing. Terex manufactures a broad range of equipment serving customers in various industries, including the construction, infrastructure, manufacturing, shipping, transportation, refining, energy, utility, quarrying and mining industries. Terex offers financial products and services to assist in the acquisition of Terex equipment through Terex Financial Services. Terex **uses its website (www.terex.com) and Facebook page (www.facebook.com/TerexCorporation) to make information available to its investors and the market.**

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