From: James Grant <jamesg@addfield.co.uk>
Sent: Saturday, 4 April 2020 12:14 AM
To: James Baker
Cc: Stephen S. Peters
Subject: RE: Emergency Medical Incinerators
Attachments: Addfield Medical Incineration Brochure C100 C200.pdf; image012.png; image013.jpg; image014.jpg; image015.jpg; image016.jpg; image017.jpg; image018.jpg; image001.png; image002.jpg; Addfield Medical Incineration Brochure C100 C200.pdf

Thanks again for the earlier James.

As discussed on the telephone I will try and bullet point the machines we are able to offer. Whilst our website shows a multitude of different machines. With an aim of speed and efficiency for the manufacturing processing we are standardising the range.

As of Today

- We have made provisions to increase our stock supplies of components and sub-assemblies and have the current.
- All existing customers of non-essential equipment (You'll see on our website we cover different industries pet cremation, oil and gas etc..) have already been notified of possible extended delivery times as we are aiming to prioritise those most in need.
- Currently we have a number of machines in stock (detailed below)
- Provision for 20x MP-200 machines to be readied in the coming weeks for stock. Slightly longer if required as containerised units. (These are currently in the pipeline).
- We also have a number of other machines currently in stock.
- Normal supply capacity of the factory is 5x machines per week.

Ramp-up of Capacity.

- We have a number contractors at our disposal
- Re-assignments of specific jobs can be outsourced to local contractors.
- Supply capacity of the factory would increase 20x machines per fortnight.

Current Countries We Supply In Asia and where partners are located.

Country	**Machines in country already**	**Local partner in place**
Afghanistan	**Yes**	**Yes**
Armenia	**-**	
Azerbaijan	**-**	
Bangladesh	**Yes**	**Yes**
Bhutan	**-**	**-**
Cambodia	**Yes**	**Yes**
Cook Islands	**-**	**(Partner in Fiji)**
Federated States of Micronesia	**-**	**(Partner in Fiji)**
Fiji	**Supported existing machine**	**Yes**
India	**-**	
[Bahasa Indonesia]	**-**	

Kazakhstan	-	
Kiribati	-	
Kyrgyz Republic	-	
Lao People's Democratic Republic	-	
Maldives	**Yes**	**Yes**
Marshall Islands	-	
Mongolia	-	
Myanmar	**Yes**	**Yes**
Nauru	-	
Nepal	**Yes**	
Pakistan	**Yes**	**Yes**
Palau	-	
Papua New Guinea	**Yes**	**Yes**
People's Republic of China	**Yes**	**Yes**
Philippines	**Yes**	**Yes**
Samoa	-	
Solomon Islands	-	
Sri Lanka	**Yes**	**Yes**
Tajikistan	**Yes**	
Thailand	**Yes**	**Yes**
Timor-Leste	-	
Tonga	-	
Turkmenistan	-	
Tuvalu	-	
Uzbekistan	-	
Vanuatu	-	
Viet Nam	**Yes**	**Yes**

Product information.

Attached is our brochure . It includes some recommendation for machines based on hospital size.

However the two machines we are focusing on are:

Addfield MP-200	Addfield C-100
	
Daily throughput up to 300kg	Daily throughput up to 1600kg
Ideal for a small hospital	Covers most other applications

Currently there are a few MP-200 and C100 available within a week. There are also a few other machines from stock.

Hopefully this provides a valuable overview.

Lastly if you need some support with regarding to recommendations for typical clinical waste management sites layout, shelter design, installation requirement we have amassed a lot of support information over the years.

Kind regards | Mit freundlichen Grüßen | Très Cordialement | Cordiales Saludos

★★★★★ Please be kind enough to leave us a review on Google [here].

Kind Regards
James Grant
Addfield Environmental Systems Ltd

From: James Grant
Sent: 03 April 2020 11:36
To: 'James Baker'
Cc: Stephen S. Peters
Subject: RE: Emergency Medical Incinerators

Good Morning James,

Thank you for your email. My name is (also)James I am the Business Development Director at Addfield and will look to address your questions one-by-one

I am working with the Asian Development Bank to support the COVID 19 response of our Developing Member Countries.
We have received some requests for guidance on available incineration technology. Following my research I identified that you have previously shipped Incinerators to Pakistan.

Yes we have shipped multiple machines Pakistan before. A rough guide we work in around 100 different countries around the world.
Specifically for Asia as an example, yesterday we've finished an installation in Tajikistan as part of a Médecins Sans Frontières (MSF) deployment.
By end of the week another 8 machines will be deployed to Cambodia as part of an ongoing UNICEF deployment there.

You'll see plenty more examples on our case studies section:
https://addfield.com/case-studies/

Could we have a conversation with you regarding your capabilities, price points and timelines for shipping to Pakistan, India and South East Asia?
Certainly you can reach me directly on +44 7805 668815. Or WhatsApp or Zoom.
Currently our manufacturing base is in the United Kingdom and we have been supported by the government here to remain open as we are part of critical infrastructure projects.
T

Do you have existing manufacturing capabilities in these areas and if not do you have an existing license format where by local engineering firms, approved by you, can be used to increase production and delivery times.
We have a baseline production schedule for non-critical orders of which there are some 70 machines on the que. However we also has an emergency production line which is designed to deploy machines rapidly to those most in need, of which there is currently some stock.
The planning for this started approximately three months ago, as such sub assembly suppliers where ask to build up stock in preparation.
We are building on our experience that we had during the Ebola crisis of West Africa, hence the preparation is well organised.

Regarding licensing format, at this moment is time we do not need to look towards this option. One of the fundamental reasons people choose Addfield is that our equipment is 40% more fuel efficient compared to alternative because of the unique brick lined refractory use (Apprentices train for 3 years for this) and last 4-5 times longer (our oldest machine is 23 years old and still in operation). We excel at meeting the UN sustainability goals, to the extent MSF tested various manufacturers and now they only buy from us (And hopefully the case studies show). With outsourcing such production, it would be a serious risk the brand. I would suggest we would evaluate such an option if it was absolutely necessary as currently we don't have any production difficulties.

Hopefully this answers some initial questions. Happy to have chat when you are free.

Kind regards | Mit freundlichen Grüßen | Très Cordialement | Cordiales Saludos

★★★★★ Please be kind enough to leave us a review on Google [here].

Kind Regards
James Grant
Addfield Environmental Systems Ltd

From: James Baker
Sent: 03 April 2020 10:41
To: Sales <sales@addfield.co.uk>
Cc: Stephen S. Peters
Subject: Emergency Medical Incinerators

Good Morning,

I am working with the Asian Development Bank to support the COVID 19 response of our Developing Member Countries.

We have received some requests for guidance on available incineration technology. Following my research I identified that you have previously shipped Incinerators to Pakistan.

Could we have a conversation with you regarding your capabilities, price points and timelines for shipping to Pakistan, India and South East Asia?

Do you have existing manufacturing capabilities in these areas and if not do you have an existing license format where by local engineering firms, approved by you, can be used to increase production and delivery times.

Many thanks

James Baker


MP-200

English

Medical Incinerators

Board of Trade Award Winner

Double Award Winners
Excellence in Manufacturing
& International Business

Greater Birmingham Chambers of Commerce

International leaders of medical incineration solutions since 1982

www.addfield.com

addfield
Incinerate • Cremate

‘The most thermally **efficient, robust** and **reliable** incinerators on the market - **Simply Built Better!**’

We are extremely proud to be one of the UK’s most established manufacturers of Medical Waste Thermal Treatment Solutions.

Our machines have been in production for more than 35 years and in such time we have invested continuously in developing the most productive, reliable and efficient machines that you can own.

We build all of our machines by hand in our facility in the heart of the UK. Combining expert craftsmanship with cutting edge technology, enabling you to invest in the best options available for treating medical waste safely whilst meeting all required regulations.

Constructed from the best materials available to deliver a return on investment that lasts for years. As a result we have installed machines in over 95 countries across 6 continents, for customers that return to us time and again for one reason, our machines are simply built better. Proudly winning the prestigious Board of Trade Award and multiple Chamber of Commerce Awards recognising our Manufactuiring and excellence in International business

I hope that you find the information that you are looking for in this brochure and if you do have any questions do not hesitate to call our expert sales team.

Steve Lloyd - Managing Director.

Succesful Management Of Healthcare Waste

Incineration of healthcare waste is typically supplemented with recycling, landfill and autoclaving. Below is Government guidance of the correct management of healthcare waste.

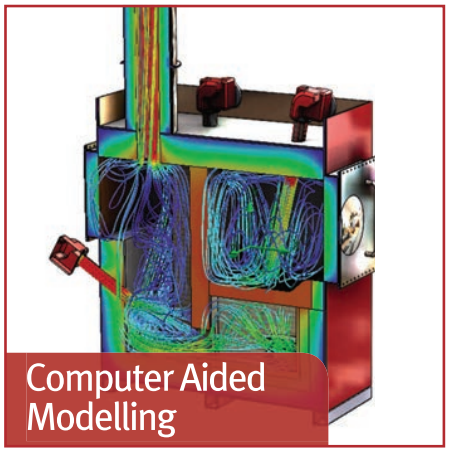
- Waste: **Yellow - Clinical Waste**
  Method: **Disposal by incineration**
- Waste: **Orange - Treated Waste**
  Method: **ATP plants or incineration**
- Waste: **Red - Anatomical waste**
  Method: **Disposal by incineration**
- Waste: **Purple - Cytotoxic & cytostatic waste**
  Method: **Disposal by incineration**
- Waste: **Yellow/Black stripe - Offensive/hygiene waste**
  Method: **Disposal by landfill or incineration**
- Waste: **Blue - Medicinal waste**
  Method: **Disposal by incineration**
- Waste: **Black - Domestic (municipal) waste.**
  Method: **Disposal by landfill or incineration**
- Waste: **White - Amalgam waste**
  Method: **For recovery**

Source: Safe management of healthcare waste, www.gov.uk

Design, manufacturing, installation & service

MP Series

Unique Hot Hearth



Computer Aided Modelling

The MP range:
The most successful medical machine for small hospitals

The Addfield MP range of medical waste incinerators have been developed specifically to provide complete destruction of biological, pharmaceutical and hazardous waste safely.

As with all Addfield machines the MP range is constructed using only the most proven traditional techniques alongside cutting edge advances in incineration technology. Built to last out of high grade 10mm Steel to deliver a robust machine that can withstand decades of regular usage and continue to perform exceptionally. With multi layered insulation ensuring that the heat is securely focussed where it is required delivering complete incineration whilst using more than 40% less fuel to deliver a highly economical and environmentally sustainable approach to incineration.

With the added advantage of utilising Hot Hearth technology usually only found in much larger machines. The Hot Hearth boosts the machines results through providing additional heating beneath the primary chamber which speeds up the incineration process through removing cold spots found in most common incinerators.

With the benefit of a Primary and Secondary chamber all MP machines will consistently deliver safe sterile ash whilst producing smokeless and odourless emissions.

There is a clear reason why Addfield have become the manufacturer that aid agencies and health organisations throughout the world turn to for reliable and quality solutions.

Additional Options:

Containerised Waste Management Systems.

Our fully containerised, ready to go medical incineration configuration provides a disposal solution that is easy to install and requires minimal ground and civil work to implement. The structure provides housing and protection for the incineration machine, as well as a clean, safe working environment for the operative. A highly cost efficient and effective medical waste disposal solution.

Automatic Loading Systems.

With the addition of an automatic bin tipper and waste charging system, you can enable a hands free loading option, minimising the operatives interaction with the waste stream.

Strength, integrity & reliability

Advanced cleaning with Venturi System

The Addfield 'Venturi' system is a highly developed, stainless steel engineered, flue gas scrubber. Built to provide additional cleaning of exhaust gasses. Removing and neutralising particulates and airborne by-products created through the combustion process.

Neutralise waste at a microscopic level

Able to be scaled to fit all sizes of Addfield machines. The Venturi system creates a turbulent environment designed for flue gas scrubbing.

The three stage process begins when liquid and gas are introduced into the 'Converging Chamber'. Following a funnel styled construction as the area reduces the velocity of the gas increases. It then proceeds to the 'Throat' where the gas is forced to move at very high speeds. This shears the water from the sides and breaks it down into thousands of tiny water particles. This then leads into the 'Diverging Chamber' where the particles interact with the exhaust gas created through incineration. With the particles of water stripping any gaseous and particulate pollutants and transporting them into the final settling tanks. The remaining cleaned exhaust gas, can pass through the chimney into the environment.

Waste water is transferred into the settling tanks at the base of the system it is equipped with automatic levelling and controllable drainage systems for safe disposal. Caustic Soda and other additives can be introduced into the process to neutralise any specific by-products produced. The flue gas scrubbing process is both highly economical and efficient. Capable of removing over 95% of Sulphur Dioxide produced alongside other by-products of incineration.

Additional Filtration options available

Ceramic Filters

Gas is pulled through vacuum formed ceramic filter tubes, these filters remove the heavy particulates and used sorbent powders in an extremely efficient manner. A dry system that requires minimal long term maintenance and is up to 97% effective in removing particulates.

De-NOx Systems

De-NOx systems involve the use of Urea to neutralise nitrogen oxides (NOx) formation. NOx is typically kept under control using good combustion however for unusual waste streams a De-NOx system may need consideration.

Sorbent Injection

Sorbent powders come in two forms lime (or sodium bicarbonate) and activated carbon. Such powders are used to neutralise gases on large installations.
Sodium Bicarbonate is used to neutralise acid gasses whereas activated carbon is used to neutralize heavy metals, dioxins and furans.
In small-medium scale installations good combustion in the primary and secondary chambers operating at 1150deg.C can be used to control such elements.

Waste to Energy Recovery Systems

An efficient way of transforming heat into energy in the form of hot water, hot air, steam and electricity. A green source of energy, which can save on your costs whilst reducing your carbon footprint.

We currently offer a range of recovery systems for our medical incineration machines.

Waste Heat Recovery:
Energy is recovered in the form of clean hot water or hot air. A heat exchanger or boiler is used to exchange heat with the flue gas. This hot water can then safely be used to heat local facilities,whereas hot air can be used in drying processes.

Steam Generation:
Generated in the form of unsaturated/saturated steam or superheated steam. Saturated steam is typically used in a variety of cleaning or humidity generation applications. Superheated steam is used almost exclusively to drive electric turbines.

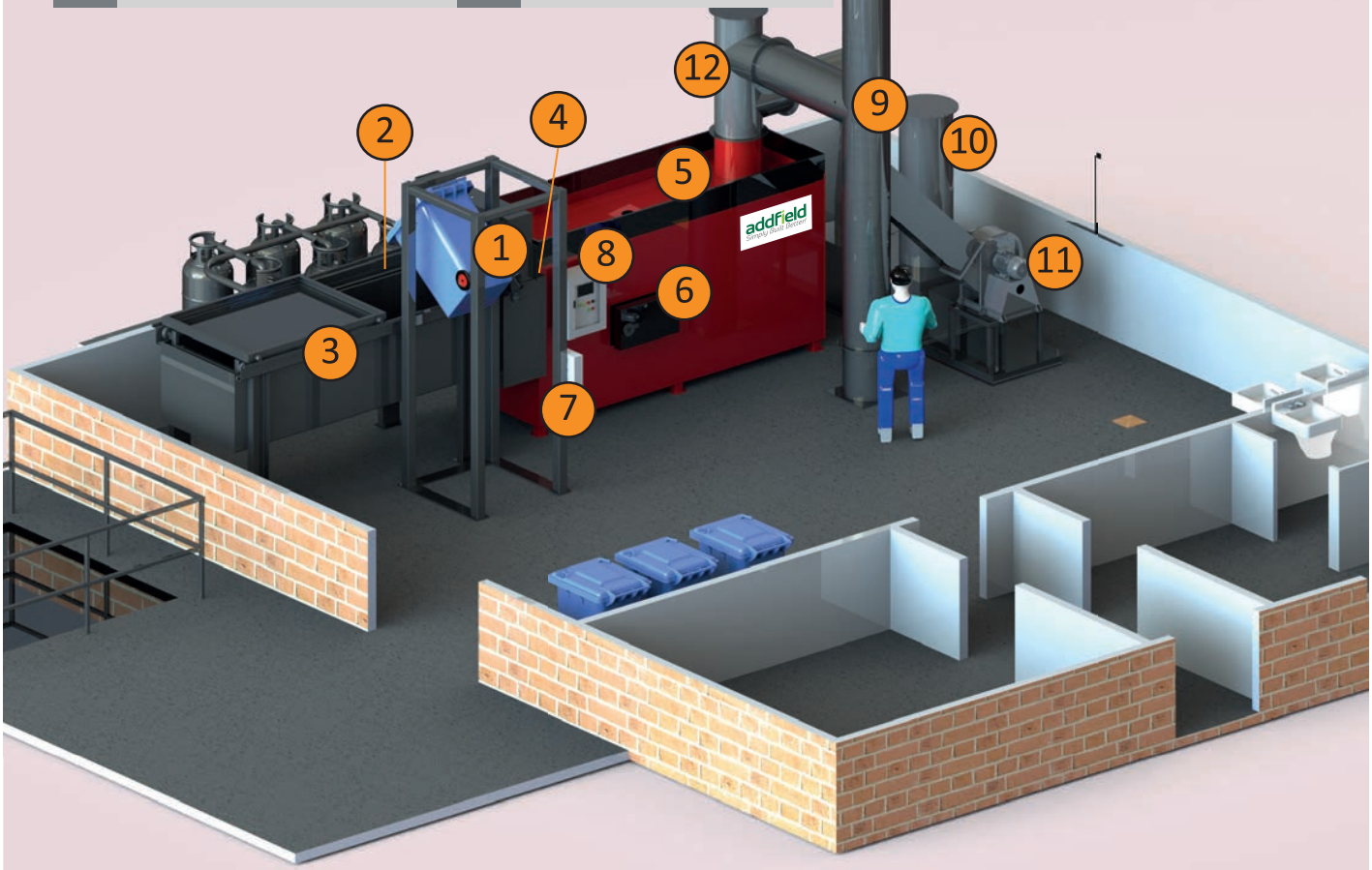
Electricity Generation:
Benefitting from the generation of superheated steam, we can offer a standard turbine capable of generating usable electricity from waste.

Typical Medical Waste incineration plant installation

As the experts in Medical Waste incineration we have been involved in range of unique installations across the world.

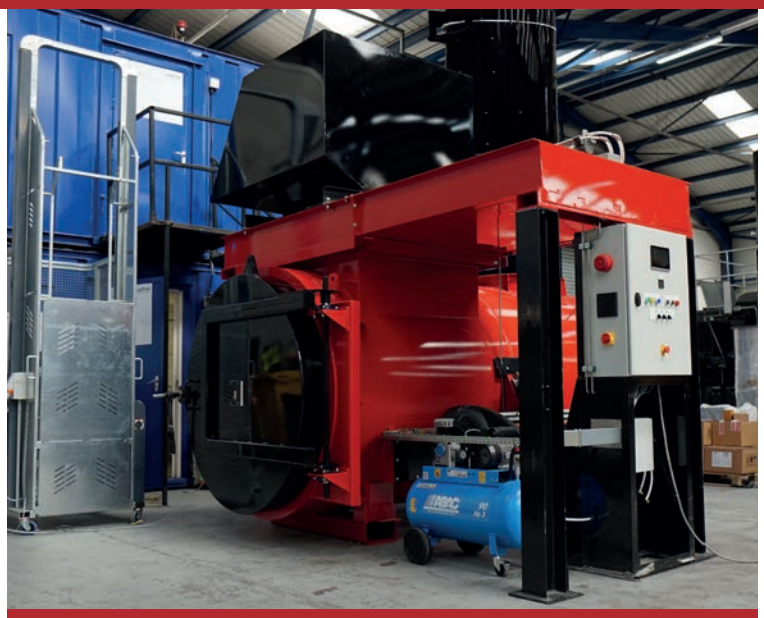
Working with a diverse range of customers we are often required to deliver complete solutions beyond simply supplying a machine. Our Medical Incinerators are built robustly to be able to work effectively in a wide array of environments. With a recommended installation for a continuous process incineration containing additional accessories and Venturi System illustrated below.

No.	Item Description		
1	Optional 240L Bin Tipper	7	Waste Charging Control Panel
2	Hopper Door	8	Main PLC Control Panel
3	Automatic Waste Charging Door	9	Venturi Wet Scrubber System
4	Automatic Vertical Lift Door	10	Condenser
5	Medical Incinerator	11	ID Fan
6	De-Ashing Door	12	Emergency By-pass



C100 and C200 High capacity clinical waste incinerators.

C100 Medical Waste Incinerator



C200 With Bin Tipper and Pneumatic Hopper Loading System

The C100 and C200 incinerators deliver outstanding throughput from a very versatile design. Specifically designed to securely manage near continuous loading of mixed medical waste.

Capable of securely destroying between 1600kg and 3200kg of hazardous waste per day. Benefitting from a range of loading options including the manual loading of waste through the main primary chamber door. Through to fully automated bin tipper systems and pneumatically operated waste hoppers.

Additional options include an automatic ram charging system, automatic de-ashing and flue gas cleaning equipment to satisfy the most stringent environmental standards.

Developed to be compact yet powerful the C100 and C200 are small enough to be installed in most facilities and can even be delivered in a fully operational containerised solution.

The cylindrical primary chamber is constructed with a multi-layered bricked refractory to deliver optimal combustion and fuel efficiency.

Equipped with advanced control systems, which manage the entire process. Maintaining the primary and secondary after chamber which incorporates a two-second residue time to ensure that cleaned gases are returned into the environment.

Ideally suited for medium to large hospitals.

Incinerator Comparison Table

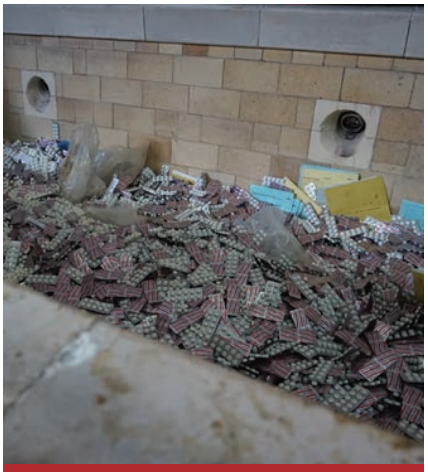
Standard Specification	MP100	MP200	MP300	MP400	MP500	C100	C200
Capacity per day (Kg)	50 - 100	150 - 300	300 - 400	400 - 500	500 - 600	600 - 1600	1600 - 3200
External Dimensions LxWxH (m)	2.43 x 1.15 x 1.95/3.82	2.83 x 1.15 x 1.95/3.82	3.23 x 1.15 x 1.95/3.82	3.63 x 1.15 x 1.95/3.82	4.03 x 1.15 x 1.95/3.82	3.73 x 2.05 x 3.60/5.40	3.75 x 4.95 x 3.80/7.40
Internal Chamber LxWxH (m)	0.80 x 0.67 x 0.70	1.20 x 0.67 x 0.70	1.60 x 0.67 x 0.70	2.00 x 0.67 x 0.70	2.40 x 0.67 x 0.70	3035 x 1170 Ø	3035 x 1353 Ø
Internal Chamber Volume(m^3)	0.38	0.57	0.76	0.95	1.13	3	4.35
Loading options	Front Loading (Manual and Automatic options)					Front / Top (Manual and Automatic options)	
Refractory Type	218mm High Grade Brick					156mm High Grade Brick	
Burn Rate (Per Hour)	<50kg					<100kg	<200kg
Weight (Approx. Tonnes)	2.8	3.2	3.6	4	5	8.6	12

*We reserve the right to change the specification, dimensions and quality of materials from time to time, so long as the alteration is minor or an improvement to the said products.

Quality is assured
ISO 9001:2015
ISO 14001:2015

International Supply & Installation. Turn Key Operations

Clinical Waste Disposal Plant
Edinburgh, Uk



Pharmaceutical Disposal Plant
Constanine, Algeria

UNICEF Funded Treatment Center
Dapaong, Togo

Environmentally Friendly

Why Choose Addfield?

A brand you can trust.
The name 'Addfield Environmental Systems' has been synonymous with revolutionary thermal technology and innovative ideas since being founded in the early 1980's.

Service you can rely on.
Throughout our history, Addfield has become the go-to provider for state of the art thermal engineering. Today the Addfield brand is known and respected around the globe for quality and reliability. Currently servicing more than 95 countries where our products are assisting to:

1. Reduce medical and hazardous waste.
2. Control biosecurity.
3. Convert waste to energy.
4. Reduce landfill obligation.
5. Meet emission compliance.

Exacting attention to detail.
With our ISO Accreditation, world class on site engineering and technical support teams, it is little wonder Addfield are the preferred supplier to many of the worlds recognised aid agencies. Providing comprehensive cost effective turnkey solutions, to solve your medical waste stream problem, we are experts in thermal combustion.

Cutting edge Research and Development.
All of our products are designed by our in-house engineering team using the best available 3D solid-works & fluid dynamics software. Our design engineers regularly work alongside some of the most well respected healthcare organisations in the world.

With you for the long term.
Addfield machines are built to last delivering you continuous results for years to come. With a full after sales team in place to quickly address all your needs. Alongside consistent investment in our after sales operations including knowledgeable back office personnel, working with our highly experienced field engineers.
Addfield – *Robust, Reliable, Efficient.... Simply built better.*

Call for FREE advice on **+44 (0)1543 571 280**
or visit **www.addfield.com** for more information

Global Supply, Installation & Support

Specialists in the design, manufacture and supply of Incineration and Cremation solutions

Discover the full benefits of an Addfield incinerator.

Call our expert sales team today on

+44 (0)1543 571280

Medical | Animal | Aquacultural | Pet Cremation | Municipal

Addfield Environmental Systems Limited
Unit 9 | Zone 4 | Burntwood Business Park
Staffordshire | WS7 3XD | United Kingdom

t: +44 (0)1543 571280
f: +44 (0)1543 571173
e: sales@addfield.com

addfield
Incinerate • Cremate

www.addfield.com