



Product Name: SUREFIRE SPECTRUM 200SC INSECTICIDE
APVMA Approval No: 60124/118946

Label Name:	SUREFIRE SPECTRUM 200SC INSECTICIDE
Signal Headings:	CAUTION KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING
Constituent Statements:	200 g/L IMIDACLOPRID
Mode of Action:	GROUP 4A INSECTICIDE
Statement of Claims:	For the control of aphids, mirids and brown flea beetle on cotton; For the control of green peach aphid, woolly aphid, grey cabbage aphid and turnip aphid on crops specified in the directions for use table; For the control of some insect pests of ornamentals; For use in the management of subterranean termites as specified in the Directions for Use
Net Contents:	250 mL - 60 L
Restraints:	Restraints: (TERMITICIDE APPLICATIONS) DO NOT apply to soils if excessively wet or immediately after heavy rain to avoid run-off of chemical. DO NOT disturb the treated zone with subsequent construction of additions or alterations, paths, steps, flower beds etc. DO NOT use at less than indicated label rates. DO NOT use in cavity walls (except for direct treatment of a nest).
Directions for Use:	This section contains file attachment.

Other Limitations:	
Withholding Periods:	<p>WITHHOLDING PERIODS:</p> <p>APPLES: NOT REQUIRED WHEN USED AS DIRECTED</p> <p>COTTON: DO NOT HARVEST FOR 13 WEEKS AFTER APPLICATION</p> <p>COTTON: DO NOT GRAZE OR CUT FOR STOCK FOOD</p> <p>CUCURBITS: DO NOT HARVEST FOR 1 DAY AFTER APPLICATION</p> <p>TOMATOES: DO NOT HARVEST FOR 3 DAYS AFTER APPLICATION</p> <p>BRASSICAS, CAPSICUM, EGG PLANT, POTATOES, SWEET POTATOES: DO NOT HARVEST FOR 7 DAYS AFTER APPLICATION</p> <p>STONE FRUIT: DO NOT HARVEST FOR 21 DAYS AFTER APPLICATION</p> <p>DO NOT graze any treated area, or cut for stock food.</p> <p>DO NOT feed produce harvested from treated area to animals, including poultry.</p>
Trade Advice:	<p>Export of Treated Produce</p> <p>Growers should note that suitable MRLs or import tolerances may not be established in all markets for edible produce treated with Surefire Spectrum 200SC Insecticide. If you are growing edible produce for export, please check with PCT for the latest information on MRLs and export tolerances before using Surefire Spectrum 200SC Insecticide.</p>
General Instructions:	This section contains file attachment.
Resistance Warning:	<p>Insecticide Resistance Warning</p> <p>GROUP 4A INSECTICIDE</p> <p>For insecticide resistance management, Surefire Spectrum 200SC Insecticide is a Group 4A insecticide. Some naturally occurring insect biotypes resistant to Surefire Spectrum 200SC Insecticide and other Group 4A insecticides may exist through normal genetic variability in any insect population. The resistant individuals can eventually dominate the insect population if Surefire Spectrum 200SC Insecticide and other Group 4A insecticides are used repeatedly. The effectiveness of Surefire Spectrum 200SC Insecticide on resistant individuals could be significantly reduced. Since occurrence of resistant individuals is difficult to detect prior to use, PCT Holdings Pty Ltd accepts no liability for any losses that may result from the failure of Surefire Spectrum 200SC Insecticide to control resistant insects. Surefire Spectrum 200SC Insecticide may be subject to specific resistance management strategies. For further information contact your local supplier, PCT representative or local agricultural department agronomist.</p> <p>Insecticide Resistance Management Strategy for cotton aphid in cotton: Contact your local supplier, PCT representative or local agricultural department agronomist.</p> <p>Insecticide Resistance Management Strategy for aphids, whitefly and melon thrips: Do not apply Surefire Spectrum 200SC Insecticide (or other group 4A insecticides) in consecutive sprays within and between seasons. Rotate with registered insecticides from other mode of action groups.</p> <p>Confined environments such as glasshouses</p> <p>Annuals: Do not apply more than one spray of Surefire Spectrum 200SC Insecticide to any one crop.</p> <p>Perennials: Rotate with registered insecticides from other groups. Use a maximum of three sprays in any 12 month period.</p>

Precautions:	
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Protections:	<p>PROTECTION OF LIVESTOCK Dangerous to bees. DO NOT spray any plants in flower while bees are foraging. DO NOT graze any treated area, or cut for stock food. DO NOT feed produce harvested from treated area to animals, including poultry.</p> <p>PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT DO NOT contaminate streams, rivers or waterways with the chemical or used containers. A spray drift minimisation strategy should be employed at all times when aerially applying sprays. The strategy envisaged is exemplified by the cotton industry's Best Management Practices Manual.</p>
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Storage and Disposal:	<p>STORAGE AND DISPOSAL Store in the closed, original container in a cool, well-ventilated area. Do not store for prolonged periods in direct sunlight. Triple-rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture and deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots, in compliance with relevant local, state or territory government regulations. Do not burn empty containers or product.</p> <p>Refillable containers Empty contents fully into application equipment. Close all valves and return to designated collection point for refill or storage.</p>
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Safety Directions:	<p>SAFETY DIRECTIONS Harmful if swallowed. May irritate the eyes and skin. Repeated exposure may cause allergic disorders. Avoid contact with eyes and skin. When preparing product for use and using the product as a termiticide, wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves and goggles. If clothing becomes contaminated with product or wet with spray, remove clothing immediately. If product or spray on skin immediately wash area with soap and water. Wash hands after use. After each day's use, wash gloves, goggles and contaminated clothing.</p>
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First Aid Instructions:	<p>FIRST AID If poisoning occurs contact a doctor or Poisons Information Centre. Phone Australia 131126.</p>
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First Aid Warnings:	
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DIRECTIONS FOR USE

1. FOLIAR SPRAY APPLICATIONS (AGRICULTURAL APPLICATIONS)

Crop	Pest	Rate	WHP	Critical Comments
Cotton	Aphids	250 mL/ha + Reactor Penetrant at 0.2% v/v (2 mL/L water) or equivalent Organo silicone surfactant* (eg Freeway Gold) *Check with PCT for recommended Organo silicone surfactants.	13 weeks	<p>The addition of Reactor Penetrant or equivalent is critical for the performance of Surefire Spectrum 200SC Insecticide. Apply early in the establishment of an aphid infestation when numbers are low (ie no more than 1 or 2 leaves per plant with honeydew present). Applications made later than this may result in reduced control.</p> <p>Shorter residual control may be evident and a repeat application of a registered aphicide (follow the Cotton Insecticide Resistance Management Strategy for cotton aphid) may be required to achieve complete control:</p> <ul style="list-style-type: none"> • if applications of Surefire Spectrum 200SC Insecticide plus Reactor or equivalent are timed too late (see above); or • if existing high density aphid colonies (hotspots) are present; or • if aphids have established throughout the plant canopy (especially lower in the canopy); or • if there is high reinfestation pressure; or • if there is rapid crop growth; or • if Surefire Spectrum 200SC Insecticide plus Reactor or equivalent is used following a spray failure (eg resistance to organophosphate or carbamate insecticides). Note: Where resistance to carbamates or organophosphates is suspected Surefire Spectrum 200SC Insecticide plus Reactor or equivalent should be used first so as not to delay control of the aphids present. <p>Aphids treated with Surefire Spectrum 200SC Insecticide plus Reactor or equivalent may still be present on the plant but will not be feeding. Control of aphids should initially be assessed by a reduction in fresh honeydew and not on the presence of aphids on the plant. After ingesting Surefire Spectrum 200SC Insecticide, aphids may take up to 5 days to die.</p>
	Mirids Brown flea beetle			Apply when pest numbers reach treatment threshold levels as determined by field checks.

Crop	Pest	Rate	WHP	Critical Comments
Stone fruit	Green peach aphid Black peach aphid	Dilute spraying 25 mL/100 L Concentrate spraying Refer to the Mixing/ Application section	21 days	Apply at first sign of aphid infestation. Apply as a full cover spray, ensuring thorough coverage. Apply by dilute or concentrate spraying equipment. Apply the same total amount of product to the target crop whether applying this product by dilute or concentrate spraying methods. Do not use in equipment that requires rates greater than 125 mL/100 L of water.
Apples	Woolly aphid	Chemical control 12 mL/1 L of water/tree Beneficial insect plus chemical control (eg <i>Aphelinus mali</i> plus Surefire Spectrum 200SC Insecticide) 3 mL/1 L of water/tree	-	For trees up to 7 years of age. For application method, see General Instructions. If aerial colonies are present at application, maximum effectiveness may not be achieved until the following season. Do not treat more than once in any 3 year period.
Cucurbits	Green peach aphid	25 mL/100 L or 300 mL/ha	1 day	Apply at first sign of aphid infestation.
Capsicum			7 days	
Egg plant			3 days	
Potato	Grey cabbage aphid Turnip aphid		7 days	Apply at first sign of aphid infestation. Add a wetting agent.
Tomato				
Brassicas				
Sweet potato	Silverleaf whitefly, including type B	25 mL/100 L or 250 mL/ha	7 days	Apply at first sign of whitefly or melon thrips infestation.
Cucumber			1 day	Apply dilute sprays (25 mL/100 L) to run off. Ensure thorough coverage of underside of leaves. Use of droppers will improve coverage of underside of leaves.
Egg plant	Melon thrips		7 days	
Turf	First instar larvae of: African black beetle Argentinian scarab Pruinose scarab	2.5 L/ha or 25 mL/100 m ² Spray with at least 400 L water per hectare to ensure even coverage. Preferably spray on to wet or dewy grass. Irrigate with 12 mm of water commencing within one hour of application.	-	Apply at peak egg hatch, which is mid spring to mid summer depending on species.
	Larvae of billbug			Monitor adult activity through late spring and early summer. Spray when numbers peak, or when small larvae (4 mm) are found in the thatch or surface soil. Early application is essential to minimise grass damage due to feeding.

Crop	Pest	Rate	WHP	Critical Comments
Roses	Aphids	25 mL/100 L	-	Apply as a thorough cover spray at first sign of insect infestation.
Ornamental plants	Aphids	25 mL/100 L	-	
	Azalea lace bug			
	Bronze orange bug			
	Harlequin bug			
	Citrus mealybug			
	Greenhouse thrips	25 mL/100 L	-	
	Fullers rose weevil			
	Hibiscus flower beetle			
	Longtailed mealybug			
	Psyllids			
	Soft scales	25 mL/100 L	-	Spray in late spring or when small scales are first seen. Apply 3 sprays 2 weeks apart. Add a wetting agent.
Duboisia	Green peach aphid	25 mL/100 L	-	Apply when aphid numbers reach spray threshold levels as determined by regular monitoring. Ensure thorough coverage of all leaves.
Pandanus trees	Flatid (<i>Jamella australiae</i>)	Spot spray 875 mL/100 L of water Stem injection 1.75 L/1 L of water	-	Spot spray: Spray 100 mL of mixture directly into the leafy throat of each head. Stem injection: Drill holes 0.5 to 1 cm in diameter and 10 cm deep at an angle of 30° 1 to 1.5 m above ground level. Drill one hole per limb (or trunk in single trunked trees). Apply 5 mL of mixture in each hole and seal the hole. Do not reapply in the same holes. Uptake of Surefire Spectrum 200SC Insecticide, and therefore control of the pest in heavily infested heads already showing severe damage, will be slow and may be incomplete.

2. DIRECTIONS FOR USE: SOIL DRENCH APPLICATIONS (AGRICULTURAL)

Crop	Pest	Rate	Critical Comments
Elm	Elm leaf beetle	7 mL/25 mm of tree diameter at breast height	Mix the required dose in sufficient water to adequately treat each tree. Use at least 50 L of mix per tree up to a tree diameter of 400 to 500 mm and then 100 L per tree for larger trees. Inject mix to a depth of 20-30 cm in a minimum of 4 injection sites per tree, 0.75 to 1.5 m apart, arranged in an evenly spaced grid to just beyond the drip line. Ensure root zone is adequately moist with active root growth. Keep treated area moist for 7 to 10 days after treatment. Treat at least 6 to 10 weeks prior to pest attack in late winter or early spring when roots are active. DO NOT treat if soil is waterlogged.
Seedling eucalypts (to 1 m high) in pots	Chrysomelid beetle larvae Psyllids	2.5 mL/plant	Mix in water up to 0.5 L per 3 L pot and apply to soil. Use less water for smaller pots. Do not dilute to the point where mix runs out the bottom of pots.
Azaleas in pots	Azalea lace bug	3.5 mL/250 mL water/pot	Use as a soil drench for pots up to 20 L capacity.
Ornamentals in pots	Scarab beetle larvae	3.5 mL/5 L water	Use as a soil drench. 5 L of mixture will treat twenty 6 L pots.
Roses	Aphids	3.5 mL/2 L water/plant	Use as a soil drench by pouring mixture evenly around drip zone. Use this rate for plants up to 1 m high. For each additional metre of plant height, add 2 mL extra of Surefire Spectrum 200SC Insecticide to the 2 L of water.
For soil drench treatments, remove mulch and dead vegetation, and moisten the soil surface first. Apply the Surefire Spectrum 200SC Insecticide mixture, and then water it in well immediately after application.			

3. DIRECTIONS FOR USE (TERMITICIDE APPLICATIONS) (all States except Tasmania)

Situation	Pest	Rate	Critical Comments
Re-Inspection and Service Periods: Re-inspection within 3 months of treatment is recommended. Surefire Spectrum 200SC can deter concealed entry by subterranean termites (except <i>Mastotermes</i>) for at least two years and <i>Mastotermes</i> for at least one year. Inspections should be carried out at least annually.			
<u>Existing Buildings</u> Barrier treatments for existing buildings including domestic, industrial, government and commercial premises <u>New Buildings</u> Also applicable to external barriers (only) around new buildings	Subterranean termites (except <i>Mastotermes darwiniensis</i>) <i>Mastotermes darwiniensis</i>	Spray solution: 250 mL per 100 litres of water 500 mL per 100 litres of water	(See also GENERAL INSTRUCTIONS (TERMITICIDE APPLICATIONS)) Mix the required quantity of Surefire Spectrum 200SC in water and apply using suitable application equipment to form a complete and continuous treated zone around and under the structure as per AS3660.2. The treated zone may be created using a combination of conventional spraying and trenching as well as soil rodding. Concrete foundation slabs and paths around the structure should be drilled and injected with Surefire Spectrum solution including along the expansion joints, edges and cracks. In some cases the use of wetting agents or foaming agents may be useful in overcoming non-wetting soils or getting a more even application in areas of difficult access or soil subsidence. If the treated zone is disturbed by earthworks, construction or severe drainage problems it will have to be restored by re-application.
Service poles and fence posts			For <u>new posts</u> treat the bottom of the hole and the backfill using a minimum of 10 L of solution per hole. For <u>existing posts</u> create a continuous treated zone 150 mm wide by soil rodding or spraying the backfilled soil to a depth of 450 mm. Infested posts may also be drilled and injected with spray solution. Note that it is impossible to treat the soil at the bottom of a sound post so future attack via this route cannot be ruled out.
Nests in wall cavities, poles and trees			Locate the nest by drilling holes into the wall, pole or tree. Make sure that the full size of the nest is identified, especially the highest point. Apply at least 20 litres of Surefire Spectrum dilution into the nest through the drill holes. Drill holes should be sealed after application. NOTE: Application to wall cavities behind plaster board may result in water/mud staining of the plasterboard. Use of a dry foam applicator can reduce this risk and improve distribution within the wall cavity.

Situation	Pest	Rate	Critical Comments
Reticulation systems:	Subterranean termites (except <i>Mastotermes darwiniensis</i>)	<u>Spray solution:</u> 250 mL per 100 litres of water	The system (refer to the GENERAL INSTRUCTIONS (TERMITICIDE APPLICATIONS)) must be installed according to the manufacturer's specifications. Surefire Spectrum 200SC must only be applied via a reticulation system that has been installed with a prepared sand/soil bed of a minimum depth of 100 mm and even compaction. If not possible alternative termite protection needs to be arranged for the areas omitted (see GENERAL INSTRUCTIONS (TERMITICIDE APPLICATIONS) for further system requirements).
Perimeter and/or service penetration treatment.	<i>Mastotermes darwiniensis</i>	500 mL per 100 litres of water	The system installer must ensure that the installation will result in the application of not less than 250 mL (500 mL for <i>Mastotermes darwiniensis</i>) of product per cubic metre of soil is applied in a continuous treated zone not less than 100 mm thick. The volume of soil treated and diluted solution applied by a system is dependent on the parameters of the particular system and the type of soil type being present respectively. Guidelines should be sought from the manufacturer. For a treated zone with dimensions of 300 mm deep x 150 mm wide, 5 L per linear metre is suitable for perimeter and/or service penetration only systems. This will be different for systems treating a different volume of soil.
Complete under slab installations			For the horizontal barrier-type treated zone under the slab, not less than 50 mL (100 mL for <i>Mastotermes darwiniensis</i>) of product is required per square metre. In addition, the system installer must also ensure that a prepared sand/soil bed of 100 mm depth is provided across the whole of the under slab installation to ensure complete horizontal coverage of the product.

NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION

GENERAL INSTRUCTIONS (AGRICULTURAL APPLICATIONS)

MIXING/APPLICATION

Prior to pouring, shake container vigorously, then add the required quantity of Surefire Spectrum 200SC Insecticide to water in the spray vat while stirring or with agitators in motion.

Dilute Spraying (stone fruit)

Use a sprayer designed to apply high volumes of water up to the point of run-off and matched to the crop being sprayed.

Set up and operate the sprayer to achieve even coverage throughout the crop canopy.

Apply sufficient water to cover the crop to the point of run-off. Avoid excessive run-off.

The required water volume may be determined by applying different test volumes, using different settings on the sprayer, from industry guidelines or expert advice.

Add the amount of product specified in the Directions for Use table for each 100 L of water. Spray to the point of run-off.

The required dilute spray volume will change and the sprayer set up and operation may also need to be changed, as the crop grows.

Concentrate Spraying (stone fruit)

Use a sprayer designed and set up for concentrate spraying (that is a sprayer which applies water volumes less than those required to reach the point of run-off) and matched to the crop being sprayed.

Set up and operate the sprayer to achieve even coverage throughout the crop canopy using your chosen water volume.

Determine an appropriate dilute spray volume (See Dilute Spraying above) for the crop canopy. This is needed to calculate the concentrate mixing rate.

The mixing rate for concentrate spraying can then be calculated in the following way:

EXAMPLE ONLY

1. Dilute spray volume as determined above: For example 1500 L/ha

2. Your chosen concentrate spray volume: For example 500 L/ha

3. The concentration factor in this example is: 3 X (ie $1500 \text{ L} \div 500 \text{ L} = 3$)

4. As the dilute label rate is 25 mL/100 L for stone fruit, then the concentrate rate becomes 3×25 , which is 75 mL/100 L of concentrate spray.

The chosen spray volume, amount of product per 100 L of water, and the sprayer set up and operation may need to be changed as the crop grows.

Do not use a concentrate rate higher than that specified in the Critical Comments.

For further information on concentrate spraying, users are advised to consult relevant industry guidelines, undertake appropriate competency training and follow industry Best Practices.

APPLICATION (COTTON)

Thorough coverage of cotton plants is essential to achieve maximum performance from Surefire Spectrum 200SC Insecticide plus Reactor. Equipment should be calibrated to achieve a **minimum of 60 droplets/cm² on the target foliage**. A droplet **Volume Median Diameter (VMD)** for optimum performance from Surefire Spectrum 200SC Insecticide plus Reactor is dependent on equipment and is defined below.

Do not apply when unfavourable environmental conditions may reduce the quality of spray coverage.

Ground Application (Cotton)

Application using ground equipment should be made using **hollow cone nozzles** with a **minimum spray volume of 100 L/ha**. Hollow cone nozzles are recommended but if flat fan nozzles are used, higher water volumes will be required and nozzles should be configured to ensure thorough coverage. A droplet **VMD of 150 - 180 microns** must be used. Where multiple nozzles per row are used, they should be of the same specification to ensure that each nozzle contributes an equal proportion of the required dose. Where multiple nozzles per row are used (particularly for banded applications) ensure the correct nozzle overlap pattern is achieved on the target foliage. **Banded applications less than 100% are not recommended beyond the 15 node crop stage.**

Aerial Application (Cotton)

Apply in a **minimum spray volume of 25 L/ha**. A droplet **VMD of 120 - 150 microns** must be used. Do not exaggerate swath width or exceed a swath width of 20 to 22 m. Do not apply Surefire Spectrum 200SC Insecticide plus Reactor using Ultra Low Volume (ULV) methods. The use of large droplet placement equipment is not recommended.

Application (Apples)

During late summer or autumn, apple trees with woolly aphid colonies or damage should be identified and marked for treatment the following season. At green tip to petal fall, apply 1 litre of the prepared Surefire Spectrum 200SC Insecticide mixture to moist soil immediately around the base of the tree trunk. Ensure the mixture infiltrates the soil around the trunk and does not run off the soil. Control weeds before application. Do not disturb or remove the soil around the trunk during the season.

Note on Ornamentals

Surefire Spectrum 200SC Insecticide has been used on a wide range of ornamental plant species without damage. However, some species and varieties are particularly sensitive to chemical sprays and as this is often related to local conditions it is advisable to treat only a small number of plants first, in order to ascertain their reaction before treating the whole crop.

Compatibility

Surefire Spectrum 200SC Insecticide is compatible with Antracol[®], Baycor[®], and Nitofol[®]. Do not mix concentrates together but add each to the spray tank separately. As formulations of other manufacturers' products are beyond the control of PCT, all mixtures should be tested prior to mixing commercial quantities. As changes in climatic conditions can alter the sensitivity of plants to mixtures of sprays, PCT cannot be responsible for the behaviour of such mixtures.

GENERAL INSTRUCTIONS (TERMITICIDE TREATMENTS)

Surefire Spectrum 200SC should be considered as part of a program involving the following steps:

1. locate the nest and treat where possible;

2. repair or recommend repairs to leaks and drainage as a condition of warranty;
3. improve or recommend improvements to ventilation underneath structures;
4. ensure or recommend sub-floor areas be kept free of stored or waste timber;
5. application of soil treated zone
6. advice to property owner or manager, that disturbing the treated zone e.g. with subsequent additions, alterations or landscaping etc may render the treatment ineffective unless re-applied or other actions undertaken.
7. continuing efforts to locate and treat the colony in the nest if not eliminated before application of soil treated zone.
8. post-treatment inspection to confirm success.
9. ongoing inspections, at least annually, as recommended by AS 3660 Series.

The purpose of a non-repellent chemical soil treatment for termite management is to establish a continuous chemical treated zone (horizontal and/or vertical) between the structure and termite colonies in the soil. The treated zone impedes termite activity and discourages concealed termite entry for the service period. A great deal of care needs to be taken to understand the construction of the building and to apply the spray solution in a manner which ensures a complete treated zone. If the treated zone is not complete or breached, then concealed termite entry may occur. It is sometimes not possible to form a complete treated zone around an existing structure in which case other termite management options and/or more frequent inspections will also need to be undertaken.

Alterations to building to increase effectiveness of treatment to control Termites

Alterations include improvements to drainage and sub-floor ventilation, the removal of soil-timber contact (e.g. railway sleeper retaining walls) and the provision of access to areas for regular inspection. Poor drainage including rainwater flowing around structure perimeter may compromise the chemical treated zone. **Drainage, ventilation and timber/soil contact problems need to be addressed before treatment.**

Mixing

To ensure good mixing:

1. Thoroughly clean the spray equipment to remove residues of other formulations from the equipment before using Surefire Spectrum 200SC for the first time: and
2. Prior to pouring, shake container vigorously. Then premix the required quantity of Surefire Spectrum 200SC with water in a clean bucket before adding it to the half filled spray tank then top up to full volume. Allow the contents of the tank to be recirculated.

Soil preparation

In soils where wetting is difficult, it will be necessary to loosen the soil prior to treatment (to a depth of at least 80 mm for horizontal barrier-type treatments and below the top of the footing for vertical barrier-type treatments), creating a trench to confine the spray solution to the area to be treated. It may be necessary to add a wetting agent to the spray solution. These actions will help avoid run-off of the spray solution before it can soak into the soil.

It is recommended that application volumes given in the directions for use table be used wherever possible. However where soil conditions will not accept application of 100 L/m³, the concentration of Surefire Spectrum 200SC solution should be doubled to 500 – 1000 mL per 100 L and then apply 50 L/m³ spray solution. When applying by injection through concrete to such soils, drill hole spacing should be reduced to 150 mm (1.5 litres per hole) before resorting to the application of higher concentrations in lower volumes.

Treatment of existing buildings (Termites)

Authorised persons applying Surefire Spectrum 200SC should be familiar with the Australian Standard AS3660 Series especially the section which specifies the procedures to provide a chemical soil barrier, and/or the appendix which shows the areas where barrier treatments should be applied to ensure no gaps in treatment.

Treatment of new buildings (Termites)

Surefire Spectrum 200SC cannot be used for the application of horizontal barrier-type treated zones prior to pouring a slab unless used in a reticulation system certified for that purpose. The initial under-slab treatment shall be applied through the reticulation system as soon as possible after a 28-day period following the placement of the slab, but not more than 60 days after placement.

Reticulation systems (Termites)

The reticulation system used must be capable of establishing and maintaining complete and continuous treated zones around building perimeters, service penetrations and other possible termite entry points between the structure and the termite colonies in the soil (in accordance with the Australian Standard AS3660 series).

Reticulation systems suitable for this purpose are certified as meeting AS3660 by suitable persons or organisations with the relevant expertise in the area of termite management and engineering construction. The system must allow the application of a minimum 100 mm thick treated zone.

It is strongly recommended that the product user communicates with the builder and sub-contractor to ensure that the reticulation system is, or has been, installed according to the systems manufacturer's specifications and the Australian Standard AS3660 series. Reticulation systems which have been incorrectly installed are likely to increase the chances of a breach of the treated zone being compromised by termites.

Thickness of treated zone (Termites)

It is recommended that the minimum thickness of any soil treated zone is 100 mm.

HORIZONTAL BARRIERS

At the perimeter, loosen soil to a depth of at least 80 mm and a width of 150 mm then apply at least 1.5 L of spray solution per linear metre. Treatment volumes of up to 5 litres per linear metre are recommended so that the spray solution will penetrate deeper into the soil. Greater volumes are also required where deeper barriers are needed as part of the termite management system. The use of a marker dye may assist in identifying soils that have been treated. Note that the use of horizontal barriers is limited to the faces of solid building elements through which termites cannot gain concealed access (eg concrete slab or solid concrete piers). In all other cases vertical barriers should be employed.

Where access to sub floor areas is restricted by a clearance of less than 400 mm, the whole sub-floor surface should be treated at a rate of at least 5 litres of spray solution per m². Care must be taken to avoid spray shadows eg behind piers.

TREATMENT BENEATH CONCRETE SLABS AND PATHS

Horizontal barriers can also be applied by drilling through existing slabs. As uneven distribution is possible under the slab, increase the application rate to at least 10 litres of spray solution per m². Use a drill hole spacing between 150 and 300 mm. Use a slab injector fitted with a multidirectional tip that is rotated during application to ensure even distribution. If soil subsidence has occurred beneath the concrete, the use of a foam carrier may assist in treating critical areas.

Foam carriers may be useful in ensuring that an even distribution is achieved, however it is important that the foam application is calibrated to ensure that the minimum application rate of Surefire Spectrum 200SC is 12.5 mL product per m². Mix the appropriate quantity of Surefire Spectrum 200SC in water and add the manufacturer's recommended quantity of foam agent (see Table). Apply sufficient volume of Surefire Spectrum foam alone or in conjunction with liquid solution to provide a continuous zone that has been treated at the recommended rate.

Mixing table to prepare foam to treat 1 m ²				
Surefire Spectrum 200SC (mL)*	Water (litres)	Foam expansion ratio	Volume of finished foam / m ²	Foam consistency
12.5	5	1:1 (not foamed)	5 L	Standard solution
	2.5 5	5:1	12.5 L 25 L	Wet foam ↕
	2.5 5	10:1	25 L 50 L	
	2.5 5	20:1	50 L 100 L	Very dry foam
* Add the manufacturer's recommended quantity of foam agent to the Surefire Spectrum 200SC solution				

Drilling along cracks in slabs, expansion joints, walls and around service penetrations (eg plumbing/electrical): Holes should be drilled no further than 150 mm from the crack, wall, expansion joint or service penetration and should be 150 to 300 mm apart.

The following table shows the recommended hole spacing and recommended volume of spray solution required per injection hole, depending on the soil type.

Hole Spacing (mm)	Litres per hole	Soil type
150 mm	1.5	Heavy Clay
200 mm	2	Clay loams
250 mm	2.5	Loams
300 mm	3	Sands

Drill holes must be resealed after application of Surefire Spectrum 200SC solution.

VERTICAL BARRIERS

To install a vertical barrier use a minimum of 100 L of spray solution per m³ of soil. Vertical barriers can be applied either by trenching and treating the soil as it is backfilled, or by a combination of trenching and soil rodding at the bottom of the trench. Vertical barriers must extend down to 100 mm below the top of the solid footings if they are to be complete. Note that termites may gain access behind engaged piers against single brick walls unless the soil is treated on both sides of the wall down to the footing. Vertical barriers should be at least 150 mm wide. Apply 1.5 litres of spray solution per linear metre per 100 mm depth of barrier. In most cases the spray solution will soak into the soil below this depth so a minimum application rate of 5 litres per linear metre is recommended. When using soil rodding equipment, the distance between each rod insertion should be no greater than 150 mm.

Colonies not in contact with ground

Occasionally, subterranean termites establish a colony in a building without having contact with the soil because they have access to a continuous supply of moisture (e.g. faulty plumbing or leaky roof). Such colonies may not be affected by a soil treatment alone and should be treated by direct nest application (such as with the dry foam recommendations referred to above) or by other indirect procedures (e.g. use of a colony eradicator or baiting system).

Re-inspection

Re-inspection within 3 months of treatment is recommended.

Service Period

Commercial use has shown that a correctly administered application of Surefire Spectrum 200SC can deter concealed entry by subterranean termites (except *Mastotermes*) for at least two years and *Mastotermes* for at least one year. Regular competent inspection is recommended as part of an ongoing termite management programme. Inspections should be carried out at least annually and concurrently, efforts be made to eliminate termite colonies in the area.